ISSUE 197 MAY 2010

Better Homes and Gardens®

WOOD®

The World's Leading Woodworking Resource

The Woodworker's Secret to Accuracy p.30

Build-in-a-weekend Garden Bench

59 Shop Tips Inside!

Only Basic Tools and Skills Required! p.38

More Great Projects

- Wall Shelves p.34
- CD/DVD Cabinet p.70
- Lidded Bowl p.62
- Tool Storage p.22

Tablesaw Special!

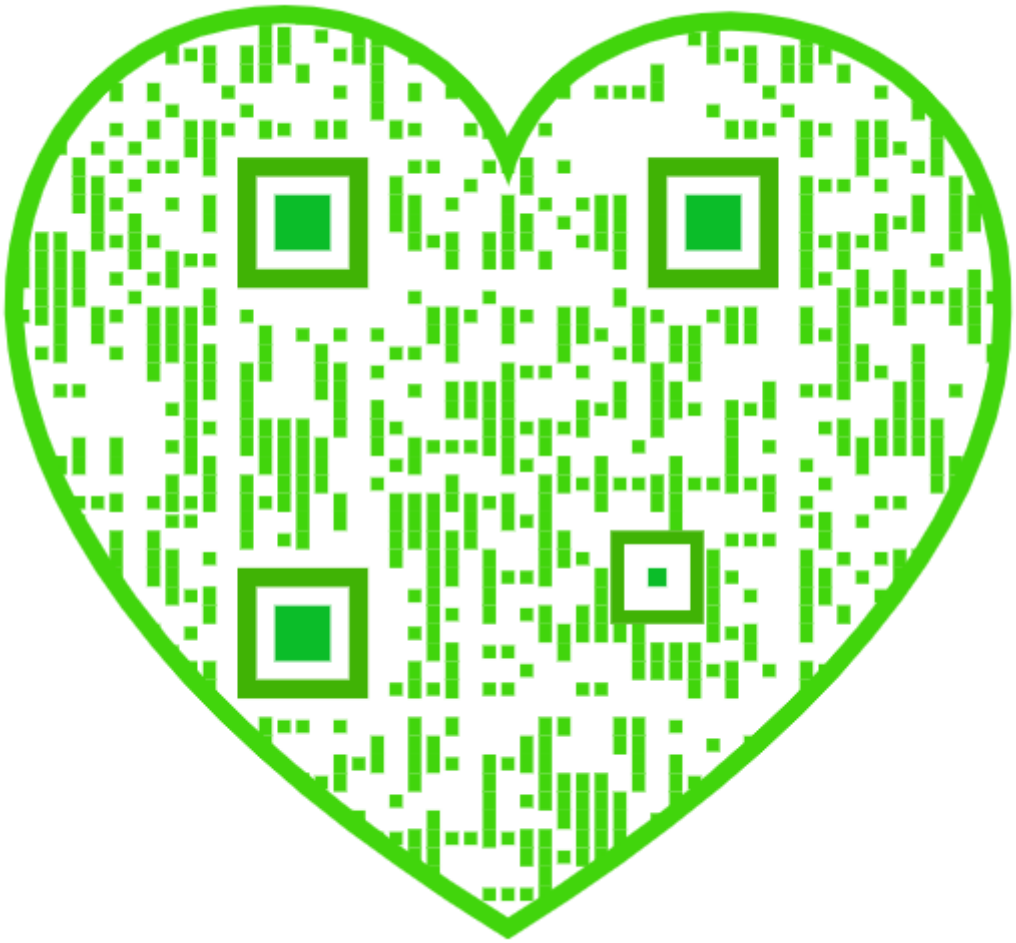
SHOP-TEST: Cabinet-style Tablesaws p.49

and Tablesaw Set-up Tricks Revealed! p.56

6 Ways to Put More Might in Your Miters p.42

Easy Patches For Finish Scratches p.26

Display until May 18, 2010
05
$6.99 U.S.
0 92567 14072 5

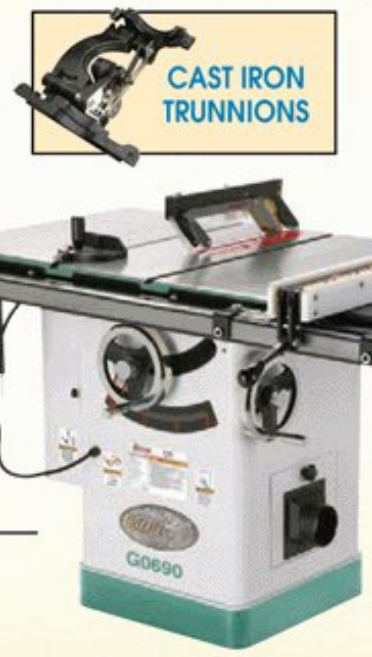


Grizzly Industrial®

Purveyors of Fine Machinery®, Since 1983

10" Cabinet Table Saws with Riving Knife

- Motor: 3 HP, 220V, single-phase
- Table size with extension: G0690 -27" x 40", G0691 - 27" x 74¾"
- Blade tilt: left • Arbor: ⅝"
- Arbor speed: 4300 RPM
- Max. dado width: 13/16"
- Max. rip capacity: G0690 - 29½", G0691 - 50"
- Max. depth of cut: 3⅛" @ 90°, 2 3/16" @ 45°
- Approx. shipping weight: G0690 - 542 lbs. G0691 - 572 lbs.



3 HP LEESON® MOTOR!

Product Reviews & Awards ONLINE grizzly.com

FREE 10" CARBIDE TIPPED BLADE!

G0690 ONLY $1250.00

G0691 WITH EXTENSION RAILS
ONLY $1350.00

$139 Shipping ANYWHERE IN LOWER 48 STATES

Cyclone Dust Collector

New!

- Motor: 1½ HP, 110V/220V, single phase, TEFC, 3450 RPM, prewired 110V
- Air suction capacity: 775 CFM
- Static pressure at rated CFM: 2.08"
- Intake port: 6" with included 5" optional port
- Impeller: 13½"
- Cartridge filter surface area: 6975 sq. in.
- Overall dimensions: 38¼" W x 23¼" D x 68½" H
- Approx. shipping weight: 210 lbs.

COLLECTION DRUM IS MOUNTED ON CASTERS FOR EASY DUST REMOVAL

THE POWER OF A 2 STAGE CYCLONE IN A NEW COMPACT SIZE!

G0703 INTRODUCTORY PRICE **$850.00**

$69 Shipping ANYWHERE IN LOWER 48 STATES

10" Left Tilting Super Heavy-Duty Table Saw with Riving Knife

- Motor: 3 HP, 220V, single-phase, 3450 RPM
- Precision ground solid cast iron table
- Table size with extension wings: 40" x 27"
- Arbor: ⅝" • Max. dado width: ⅞"
- Cutting capacity: 8" L, 26" R
- Max. depth of cut: 3" @ 90°, 2⅛" @ 45°
- Approx. shipping weight: 514 lbs.

New!

SHOP FOX® CLASSIC FENCE

FREE 10" CARBIDE TIPPED BLADE!

G1023RL

INTRODUCTORY PRICE
ONLY $1125.00

$89 Shipping ANYWHERE IN LOWER 48 STATES

Sliding Table & Router Attachments For G0690 & G0691 Table Saws

New!

SAW NOT INCLUDED

SUPERB QUALITY!

SLIDING TABLE ATTACHMENT

ROUTER TABLE ATTACHMENT

- Industrial grade anodized aluminum table size: 47" x 9"
- Telescopic anodized aluminum fence size: 28"-48"
- Max. cross cut: 48"

T10222 ROUTER ATTACHMENT **$395.00** $39 Shipping ANYWHERE IN LOWER 48 STATES

T10223 SLIDING TABLE ATTACHMENT **$550.00** $39 Shipping ANYWHERE IN LOWER 48 STATES

- Precision ground cast iron table size: 27" x 20"
- Unique "double cross" ¾" x ⅜" T-slots
- Universal router mount
- Table insert size: 4"

12" Left-Tilting Extreme Series® Table Saw with Riving Knife Feature

- Motor: 5 HP, 220V, single-phase
- Table size with extension: 30¾" x 48⅜"
- Arbor speed: 3600 RPM
- Arbor: ⅝" & 1"
- Max. dado width: ¾"
- Max. rip capacity: 36"
- Max. depth of cut: 4" @ 90°, 2¾" @ 45°
- Approx. shipping weight: 756 lbs.

FEATURES DIGITAL BEVEL ANGLE READOUT

INCLUDES 12" BLADE

EXTREME SERIES

G0696X ~~$2195.00~~
SALE $1995.00

$169 Shipping ANYWHERE IN LOWER 48 STATES

The Ultimate 14" Bandsaw

MADE IN ISO 9001 FACTORY!

- Motor: 1 HP, 110V/220V, single-phase, TEFC, 1725 RPM
- Precision ground cast iron table
- Table size: 14" sq.
- Table tilt: 45° R, 10° L
- Max. cutting height: 6"
- Blade size: 92½" to 93½"L (⅛" - ¾" W)
- Cast iron frame
- Approx. shipping weight: 198 lbs.

Product Reviews & Awards ONLINE grizzly.com

BEST NEW TOOL POPULAR WOODWORKING

WOOD MAGAZINE TOP TOOL APPROVED 2008

AMERICAN WOODWORKER BEST BUY 2001

INCLUDES QUICK RELEASE BLADE TENSION LEVER, FENCE & MITER GAUGE

G0555
ONLY $450.00

$69 Shipping ANYWHERE IN LOWER 48 STATES

17" Heavy-Duty Extreme Series® Bandsaw with Cast Iron Wheels & Trunnion

MADE IN ISO 9001 FACTORY!

- Motor: 2 HP, 110V/220V, single-phase, TEFC
- Precision ground cast iron table size: 23⅝" x 17¼"
- Table tilt: 5° left, 45° right
- Max. cutting height: 12"
- Blade size: 131½"L (¼" - 1"W)
- 2 blade speeds: 1700 & 3500 FPM
- Approx. shipping weight: 418 lbs.

Product Reviews & Awards ONLINE grizzly.com

DELUXE RESAW FENCE & MITER GAUGE

EXTREME SERIES

G0513X2
ONLY $995.00

$89 Shipping ANYWHERE IN LOWER 48 STATES

19" Heavy-Duty Extreme Series® Bandsaw

- Motor: 3 HP, 220V, single-phase, TEFC, 1725 RPM
- Precision ground cast iron table size: 26¾" x 19"
- Table tilt: 5° L, 45° R
- Max. cutting height: 12"
- Cutting capacity/throat: 18¼"
- Blade size: 143" L(⅛" - 1¼" W)
- Blade speeds: 1700 & 3500 FPM
- Approx. shipping weight: 480 lbs.

GEARED TABLE TILT MECHANISM

HEAVY-DUTY CAST IRON FENCE & CAST IRON TABLE TRUNNIONS!

MADE IN ISO 9001 FACTORY!

EXTREME SERIES

G0514X2
ONLY $1395.00

$89 Shipping ANYWHERE IN LOWER 48 STATES

PRICING CODE 10WOODM
MENTION THIS CODE WHEN PLACING YOUR ORDER

1-800-523-4777

TECHNICAL SERVICE: 570-546-9663
FAX: 800-438-5901

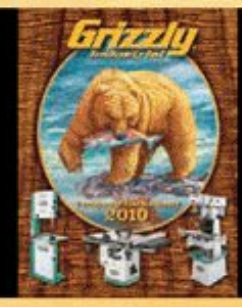
3 GREAT SHOWROOMS! BELLINGHAM, WA • MUNCY, PA • SPRINGFIELD, MO

12305

www.journal-plaza.net & www.freedowns.net

Product Reviews & Awards ONLINE grizzly.com

- OVER A MILLION SQUARE FEET PACKED TO THE RAFTERS WITH MACHINERY & TOOLS
- 2 OVERSEAS QUALITY CONTROL OFFICES STAFFED WITH QUALIFIED GRIZZLY ENGINEERS
- HUGE PARTS FACILITY WITH OVER 1 MILLION PARTS IN STOCK AT ALL TIMES
- TRAINED SERVICE TECHNICIANS AT ALL 3 LOCATIONS
- MOST ORDERS SHIPPED THE SAME DAY • 24 HOUR ORDERING BY PHONE OR ONLINE



FREE
FULL COLOR 2010 CATALOG!
THOUSANDS OF HIGH QUALITY MACHINES & TOOLS

6" Jointers with Mobile Base

- Motor: 1 HP, 110V or 1½ HP, 110V/220V, single-phase
- Precision ground cast iron table size: 7½" x 46"
- Max. depth of cut: ⅛"
- Rabbeting capacity: ½"
- Cutterhead diameter: 2½"
- Cutterhead speed: 4800 RPM
- Approx. shipping weight: 270 lbs.

FREE SAFETY PUSH BLOCKS

RACK & PINNION FENCE ADJUSTMENT

BUILT IN MOBILE BASE

G0452 1 HP MOTOR ~~$435.00~~
SALE $425.00

G0452Z 1½ HP WITH SPIRAL CUTTERHEAD
~~$695.00~~ **SALE $675.00**

$69 Shipping ANYWHERE IN LOWER 48 STATES

8" x 76" Parallelogram Jointers

- Motor: 3 HP, 220V, single-phase, TEFC, 3450 RPM
- Precision ground cast iron table size: 8" x 76⅜"
- Cutterhead speed: 5350 RPM • Cutterhead dia.: 3⅜16"
- Deluxe cast iron fence: 36"L x 1¼"W x 5"H
- Max. rabbeting depth: ½"
- Approx. shipping weight: 597 lbs.

G0490X SPIRAL CUTTERHEAD

FREE SAFETY PUSH BLOCKS

G0490 ONLY **$895.00**

$139 Shipping ANYWHERE IN LOWER 48 STATES

G0490X WITH SPIRAL CUTTERHEAD ONLY **$1195.00**

12" x 83½" Parallelogram Jointers

- Motor: 3 HP, 220V, single-phase
- Precision ground cast iron table size: 12¾" x 83½"
- Cutterhead speed: 4950 RPM
- Max.depth of cut: ⅛"
- Max. rabbeting capacity: ¾"
- Approx. shipping weight: 1059 lbs.

PEDESTAL MOUNTED MAGNETIC SAFETY SWITCH

HANDLES FOLD IN FOR ADDED SAFETY

INCLUDES FREE SAFETY PUSH BLOCKS

G0609 ONLY **$1895.00**

G0609X WITH SPIRAL CUTTERHEAD
~~$2295.00~~ **SALE $2250.00**

$250 Shipping ANYWHERE IN LOWER 48 STATES

15" Planer/Moulder

- Motor: 2½ HP, 110V, single-phase
- Max. cutting width: 15"
- Max. cutting height: 6"
- Min. stock thickness: ⅛"
- Min. stock length: 17"
- Max. planer cutting depth: 3⁄32"
- Feed rate: 11 FPM & 22 FPM
- Cutterhead dia.: 3 15⁄64"
- Cutterhead speed: 5500 RPM
- Cuts per minute: 11,000
- Table size: 15" x 16"
- Approx. shipping weight: 181 lbs.

CONVENIENT BUILT-IN DUST COLLECTOR!

QUICK CAM ADJUSTABLE FEED ROLLERS

G0477 ~~$850.00~~
SALE $795.00

$69 Shipping ANYWHERE IN LOWER 48 STATES

15" Planer

- Motor: 3 HP, 220V, single-phase
- Max. stock thickness: 8"
- Min. stock thickness: 3⁄16"
- Min. stock length: 8"
- Max. cutting depth: ⅛"
- Feed rate: 16 & 30 FPM
- Cutterhead dia.: 3"
- Number of knives: 3
- Knife size: 15" x 1" x ⅛"
- Cutterhead speed: 5000 RPM
- Table size: 15" x 20"
- Approx. shipping weight: 675 lbs.

PRECISION GROUND CAST IRON BED & INFEED OUTFEED TABLES

Product Reviews & Awards ONLINE grizzly.com

BUILT IN MOBILE BASE

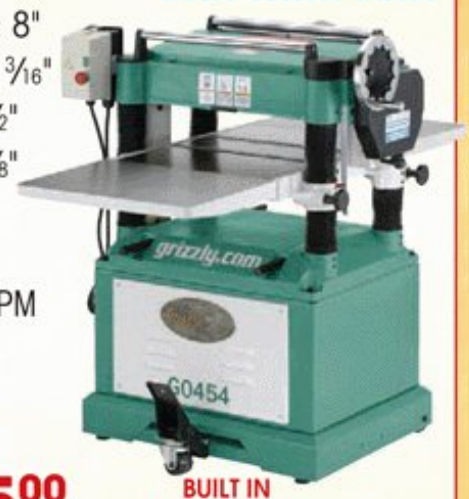
G0453 ONLY **$995.00**

$139 Shipping ANYWHERE IN LOWER 48 STATES

20" Planers

- Motor: 5 HP, 220V, single-phase
- Table size: 20" x 25¾" (20" x 55½" with extension)
- Max. stock thickness: 8"
- Min. stock thickness: 3⁄16"
- Min. stock length: 7½"
- Max. cutting depth: ⅛"
- Cutterhead speed: 5000 RPM
- Feed rate: 16 & 20 FPM
- Approx. shipping weight: 920 lbs.

PRECISION GROUND CAST IRON BED & INFEED OUTFEED TABLES



BUILT IN MOBILE BASE

G0454
ONLY $1495.00

G0454Z WITH SPIRAL CUTTERHEAD
~~$2395.00~~ **SALE $2295.00**

$169 Shipping ANYWHERE IN LOWER 48 STATES

12 Speed Heavy-Duty 14" Floor Drill Press

- Motor: ¾ HP, 110V, single-phase
- Precision ground cast iron table
- Table size: 11⅜" sq.
- Table swing: 360°
- Table tilts: 90° L & R
- Swing: 14"
- Drill chuck: ⅛" - ⅝"
- Drilling capacity: ¾" steel
- Spindle taper: MT #2
- Spindle travel: 3¼"
- Collar size: 2.595"
- Approx. shipping weight: 171 lbs.

American Best Buy Woodworker 2001

Woodworker's Tools That Endure Journal

Popular Woodworking TOOL BUYING GUIDE Editors' Choice

Product Reviews & Awards ONLINE grizzly.com

INCLUDES BUILT-IN LIGHT (BULB NOT INCLUDED)

G7944 ONLY **$325.00**

$69 Shipping ANYWHERE IN LOWER 48 STATES

16" x 43" Swivel Head Wood Lathe w/Cast Iron Legs & DRO

- Motor: 2 HP, 110V, single-phase
- Precision milled cast iron bed
- Dist. between centers: 43"
- Swing over bed: 16" • Spindle bore: 3⁄8"
- Spindle & tailstock tapers: MT#2
- 10 speeds: 600- 2400 RPM
- Approx. shipping weight: 372 lbs.

HEADSTOCK SWIVELS FOR OUTBOARD TURNING

INCLUDES 6" FACE PLATE, CUP LIVE CENTER & SPUR CENTER

G0462
ONLY $525.00

$89 Shipping ANYWHERE IN LOWER 48 STATES

2 HP Dust Collector w/2.5 Micron Bag

- Motor: 2 HP, 220V, single-phase, 3450 RPM
- Motor amp draw: 12 Amps
- Air suction capacity: 1550 CFM
- Static pressure: 11"
- Bag capacity: 5.7 cu. ft.
- Impeller: 12¾" balanced steel, radial fin
- Height w/bags inflated 78"
- Portable base: 21¼" x 33½"
- Approx. shipping weight: 126 lbs.

Z SERIES

FREE G3376 2 STAGE CYCLONE SEPARATOR

Woodworker Magazine TOP TOOL Approved 2008

Popular Woodworking Readers' Choice Award

MADE IN ISO 9001 FACTORY!

Popular Woodworking TOOL BUYING GUIDE Editors' Choice

1997 Woodworker Magazine Top Value

G1029Z2 ONLY **$279.00**

$69 Shipping ANYWHERE IN LOWER 48 STATES

NO DEALERS
NO MIDDLEMEN
BUY DIRECT & SAVE!

grizzly.com®
OVER 12,000 PRODUCTS ONLINE!

Full Year Warranty GRIZZLY Power Tools & Machinery
BillMeLater
VISA MasterCard AMERICAN EXPRESS DISCOVER NOVUS

www.journal-plaza.net & www.freedowns.net

in this issue

PROJECTS

16 **Quick Jig: Drawer-pull Aligner**

34 **"Floating" Wall Shelves**
They hang with no visible means of support.

38 **On the Cover: Basic-Built Outdoor Bench**

62 **Footed Bowl with Lid**
Turn the body first, then bandsaw away anything that's not a foot.

70 **CD/DVD Apothecary**

SKILL BUILDERS

22 **Get More Storage from Tool Stands**
Salvage the space below splayed steel stands with these clever cabinets.

26 **Three Patches for Finish Scratches**

30 **Use a Marking Knife for Razor Accuracy**

42 **Make Mighty-strong Miters**

66 **Tips from a (Massive) Model Maker**
Fred Heim builds half-scale models of heavy construction equipment out of wood.

TOOLS & MATERIALS

49 **Shop Test: Cabinet-style Tablesaws**

56 **Tablesaw Set-up Secrets**
Buying a new saw? Or want to tune your old one? Read on for helpful tips.

76 **Shop-Proven Products**
Reversible mini-lathe, dustproof shop apron.

DEPARTMENTS

6 **Sounding Board**

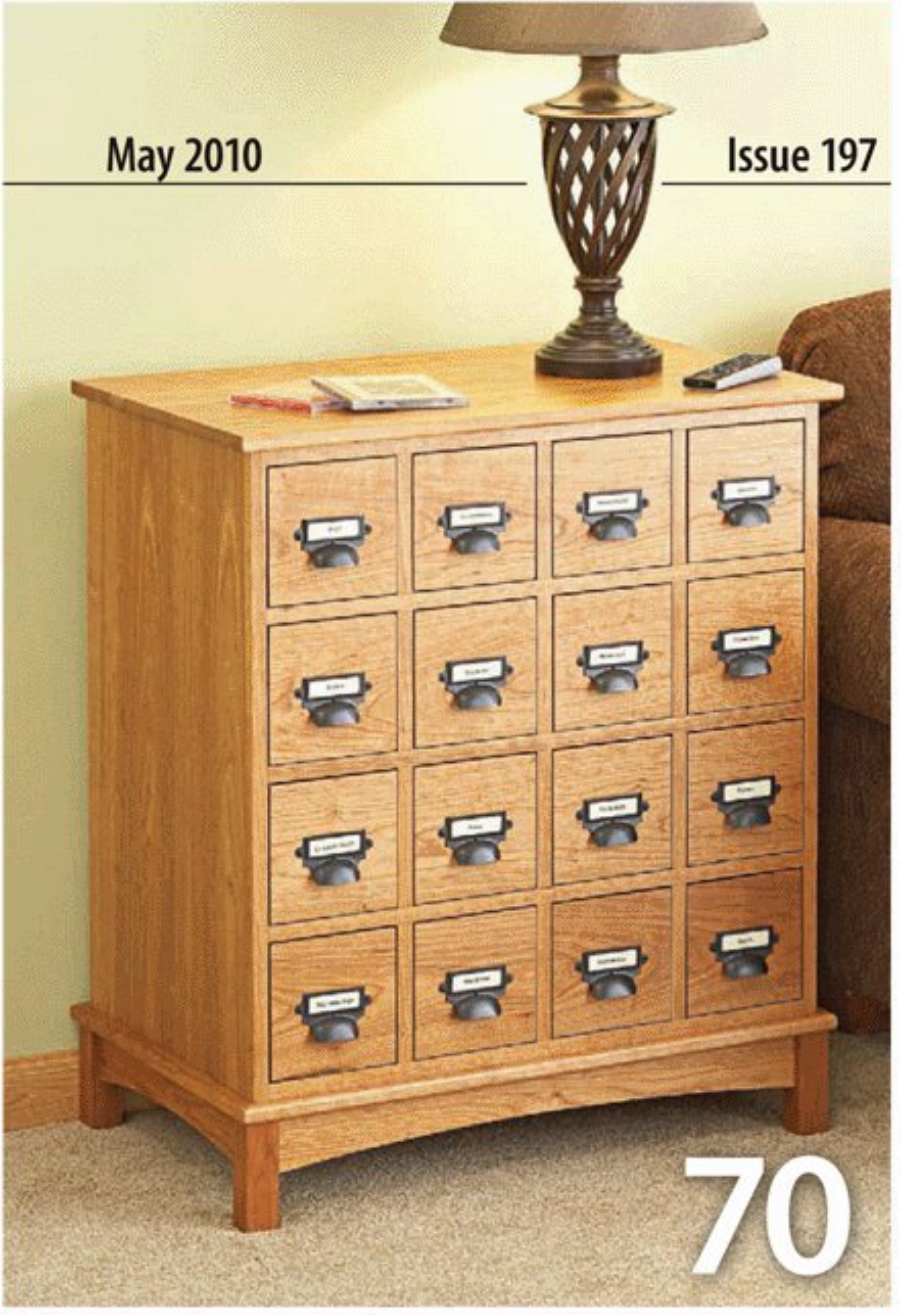
8 **Shop Tips**

20 **Shop Monkey: Rip-off Plans?**

78 **Ask *WOOD***

92 **What's Ahead**

www.journal-plaza.net & www.freedowns.net



May 2010 Issue 197

70

This seal is your assurance that we build every project, verify every fact, and test every reviewed tool in our workshop to guarantee your success and complete satisfaction.

WOOD MAGAZINE SHOP TESTED APPROVED

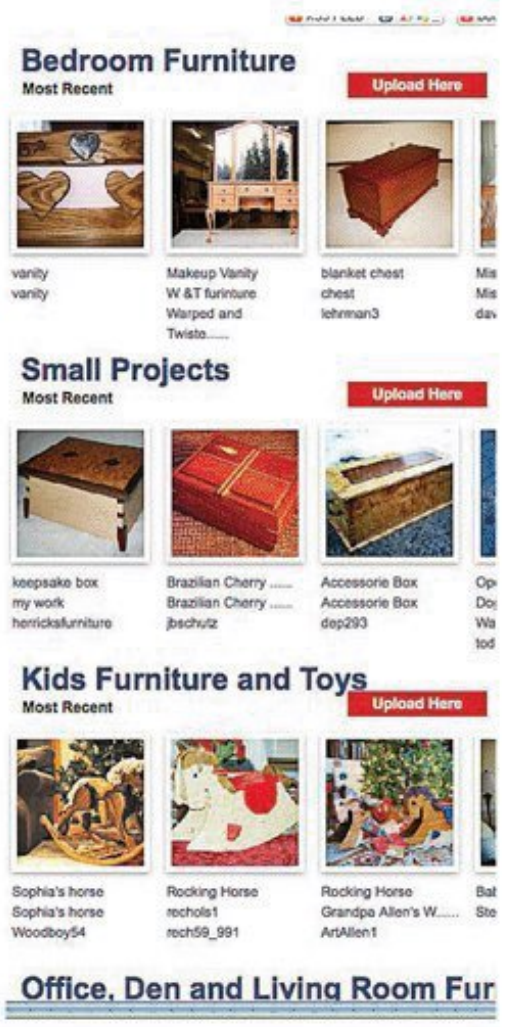
66

on the web

woodmagazine.com

POST OR PERUSE PROJECT PICTURES

Show off photos of your recent projects in the Photo Galleries at woodmagazine.com/galleries. Or see what other woodworkers are building for your next project inspiration.



SEE TITANIC TOYS IN ACTION

Fred Heim's models (*page 66*) are so meticulously detailed, some actually operate. Watch Fred drive the Peterbilt and the Cat Loader (*below*), plus see hundreds of in-progress photos of his models in a free video at woodmagazine.com/fredheim.

THE BEST PROJECT PLANS ON THE INTERNET

Start your Web search for project plans at woodmagazine.com/plans. There, you'll find more than 1,100 detailed, step-by-step projects, all searchable and neatly categorized for easy browsing. Many are free, including this bird feeder.

LEARN FROM YOUR FELLOW WOODWORKERS

At WOODTube (woodmagazine.com/woodtube), woodworkers just like you share their love of the craft in more than 250 shop-made videos. In one video, Steve Ramsey (aka *Steve in Marin)* shows how to make a labyrinth game, *below.*

www.journal-plaza.net & www.freedowns.net

SHOP FOX® WOODSTOCK INTERNATIONAL

INNOVATIVE PRODUCTS SINCE 1989!

2 YEAR WARRANTY

SHOP FOX® machines are backed by a 2 Year Warranty!

12" TABLE SAW
with Riving Knife & Extension Table

- 5 HP, 220V, single-phase motor
- Precision ground cast iron table size: 30¾" x 78¾"
- Arbor size: 1" • Arbor speed: 3600 RPM
- Blade tilt: left • Max. rip capacity: 52"
- Max. depth of cut: 4" @ 90°, 2¾" @ 45°

W1761 5 HP, 12" Table Saw

VARIABLE SPEED PLANER/MOULDER with STAND

- Motor: 2 HP, 220V, single-phase
- Precision ground cast iron table & wings
- Table size with wings: 36¼"L x 10"W
- Max. cutting width: 7"
- Max. planing height: 7½"
- Max. planing depth: ⅛"
- Max. moulding depth: ¾"
- Knife size: 7⅛" x 1½" x ¼" HSS
- Cutterhead speed: 7000 RPM
- 4" dust port
- Rubberized steel feed rollers
- Approx. shipping weight: 330 lbs.

We also carry an extensive selection of moulding knives for this machine!

PATENTED

Precision Ground Cast Iron Table

Heavy-Duty Cabinet Stand

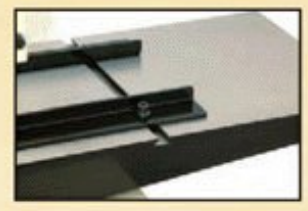


Table Wings Have T-slots for Easy Guide Rail Adjustment

W1812 Planer/Moulder

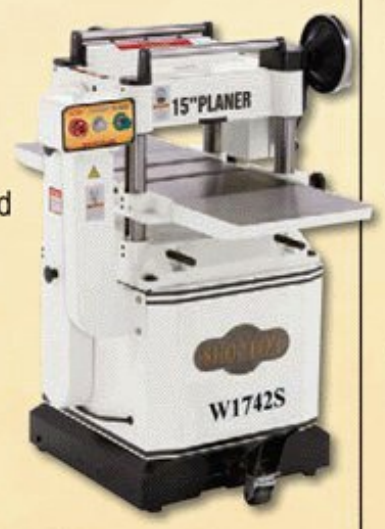
8" JOINTER
with Parallelogram Adjustable Beds

- 3 HP, 220V, single-phase, TEFC motor
- Precision ground cast iron parallelogram design table measures 8" x 76⅝"
- 4 knife, 5350 RPM cutterhead
- Large center mounted cast iron fence
- Rabbeting capacity: ⅝"

W1741 8" Jointer

SPIRAL CUTTERHEAD PLANERS
with Built-in Mobile Base

- 3 HP or 5 HP, 220V, single-phase motor
- Precision ground cast iron table & extension wings
- 2 speed gear box
- 2 adjustable bed rollers
- German-made carbide insert spiral cutterhead
- Pedestal mounted thermal overload magnetic safety switch
- Built-in locking mobile base



W1742S 15" Planer
W1754S 20" Planer

10" SLIDING TABLE SAW
with Scoring Blade & Riving Knife

- 5 HP, 220V, single-phase, TEFC motor
- Table size with extension wings: 40" W x 47" L
- Sliding table size: 12¼" W x 63" L
- Scoring blade diameter: 3⅛"
- Scoring blade arbor speed: 8,000 RPM
- Main blade arbor speed: 4,000 RPM
- Single lever locking fence

W1811 10" Sliding Table Saw

OUTSTANDING SHOP FOX® ACCESSORIES

SHOP FOX®

ADJUSTABLE MOBILE BASES

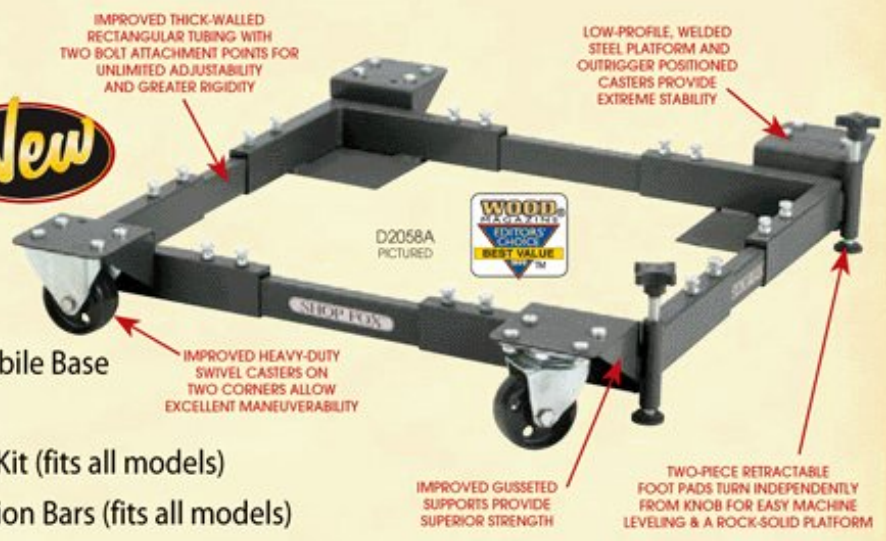
STRONGER FRAME WITH IMPROVED WHEELS AND GUSSETED SUPPORTS!

D2260A
Mini Mobile Base
600 lb. capacity

D2057A
Heavy-Duty Mobile Base
700 lb. capacity

D2058A
Super Heavy-Duty Mobile Base
1300 lb. capacity

New


IMPROVED THICK-WALLED RECTANGULAR TUBING WITH TWO BOLT ATTACHMENT POINTS FOR UNLIMITED ADJUSTABILITY AND GREATER RIGIDITY
LOW-PROFILE, WELDED STEEL PLATFORM AND OUTRIGGER POSITIONED CASTERS PROVIDE EXTREME STABILITY
D2058A PICTURED
WOOD MAGAZINE EDITORS' CHOICE BEST VALUE
IMPROVED HEAVY-DUTY SWIVEL CASTERS ON TWO CORNERS ALLOW EXCELLENT MANEUVERABILITY
IMPROVED GUSSETED SUPPORTS PROVIDE SUPERIOR STRENGTH
TWO-PIECE RETRACTABLE FOOT PADS TURN INDEPENDENTLY FROM KNOB FOR EASY MACHINE LEVELING & A ROCK-SOLID PLATFORM

D2259A Extension Kit (fits all models)
D2246A 36" Extension Bars (fits all models)

RIGHT ANGLE JIG

Cut tenons, dados, rail ends and finger joints safely & with complete accuracy. The SHOP FOX® Right Angle Jig is constructed using top quality aluminum castings & plates which are machined to exacting tolerances.

- Solid aluminum
- Extended depth: 13"
- Closed depth: 7½"
- Height: 8"
- Max. horiz. opening: 1¾" x 8"

ADJUSTABLE ROLLER STAND

- Stand length is adjustable from 19½" to 54"
- Number of rollers: 9
- Stand height adjusts from 24½" to 38"
- Roller diameter: 2"
- Two-way locking swivel casters: 4¼" diameter
- 300 lb. capacity

WOODSTOCK® INTERNATIONAL IS ALSO HOME TO THESE OTHER FINE BRANDS:
STEELEX®, PRO-STICK®, PLANER PAL®, JOINTER PAL®, BOARD BUDDIES®, PARROT VISE®, ROMAN CARBIDE® ROUTER BITS AND SHAPER CUTTERS.
VISIT OUR WEBSITE OR CALL TOLL FREE TO FIND AN AUTHORIZED DEALER NEAR YOU.

SHOPFOX.BIZ
sales@shopfox.biz WHOLESALE ONLY

WOODSTOCK INTERNATIONAL INC.

1-800-840-8420

SHOP FOX® is a registered trademark of Woodstock International, Inc.

12309

www.journal-plaza.net & www.freedowns.net

Better Homes and Gardens®
WOOD®
woodmagazine.com

May 2010 | Vol. 27, No. 2 | Issue No. 197

My best tip for accurate woodworking is:

Use stops of every description and function—far more precise than measuring and cutting.

Measure only when you must. Instead, use the actual workpieces to mark the mating workpiece.

Spend the money for a truly accurate square.

Don't rely strictly on plan dimensions. Take measurements from the project as you go and cut to fit.

When something is "good enough," it's just that—don't mess it up striving for perfection.

Begin with well-adjusted tools, sharp bits and blades, and lots of patience.

EDITOR-IN-CHIEF **BILL KRIER**

Managing Editor **MARLEN KEMMET** | Deputy Editor **DAVE CAMPBELL**
Art Director **KARL EHLERS** | Senior Design Editor **KEVIN BOYLE**
Techniques Editor **BOB WILSON** | Tool & Techniques Editor **BOB HUNTER**
Multimedia Editor **LUCAS PETERS** | Multimedia Editor **CRAIG RUEGSEGGER**
Design Editor **JEFF MERTZ** | Associate Art Director **GREG SELLERS**
Production/Office Manager **MARGARET CLOSNER** | Administrative Assistant **SHERYL MUNYON**

Photographers **JASON DONNELLY, SCOTT LITTLE, JAY WILDE**
Contributing Illustrators **TIM CAHILL, LORNA JOHNSON, ROXANNE LeMOINE**
Technical Consultants **BOB BAKER, DOUG HICKS**
Contributing Craftsman **JIM HEAVEY**
Contributing Proofreaders **BABS KLEIN, IRA LACHER, JIM SANDERS**

Publisher **MARK L. HAGEN**

ADVERTISING AND MARKETING

CHICAGO: 333 N. Michigan Ave., Suite 1500, Chicago, IL 60601
Marketing Manager **AMANDA SALHOOT**
Advertising Manager **JACK CHRISTIANSEN**
Direct Response Advertising Representative **LISA GREENWOOD**
Assistant **TIM BAARDA**
ATLANTA: Navigate Media
DETROIT: RPM Associates

Business Manager **JEFF STILES**
Consumer Marketing Director **TODD BIERLE**
Retail Brand Manager-Newsstand **JESS LIDDLE**
Production Manager **SANDY WILLIAMS**
Advertising Operations Manager **JIM NELSON**
E-Commerce Manager **MATT SNYDER**

Vice President/Group Publisher **TOM DAVIS**

MEREDITH NATIONAL MEDIA GROUP
President **JACK GRIFFIN**

EXECUTIVE VICE PRESIDENTS
President of Consumer Magazines **TOM HARTY**
Chief Brand Officer **ANDY SAREYAN**
Chief Digital Officer **DOUG OLSON**
President, Meredith Integrated Marketing **MARTIN F. REIDY**

SENIOR VICE PRESIDENTS
Corporate Marketing Officer **NANCY WEBER**
Consumer Marketing **DAVID BALL**
Corporate Sales **MICHAEL BROWNSTEIN**
Editorial Director, Des Moines **GAYLE GOODSON BUTLER**
Editorial Director, New York **SALLY LEE**
Finance **MIKE RIGGS**
Meredith 360° **JEANNINE SHAO COLLINS**
Meredith Women's Network **LAUREN WIENER**

VICE PRESIDENTS
Chief Technology Officer **TINA STEIL**
Direct Response & Travel **PATTI FOLLO**
New Media & Marketing Services **ANDY WILSON**
Newsstand **DAVID ALGIRE**
Production **BRUCE HESTON**
Research Solutions **BRITTA WARE**

meredith

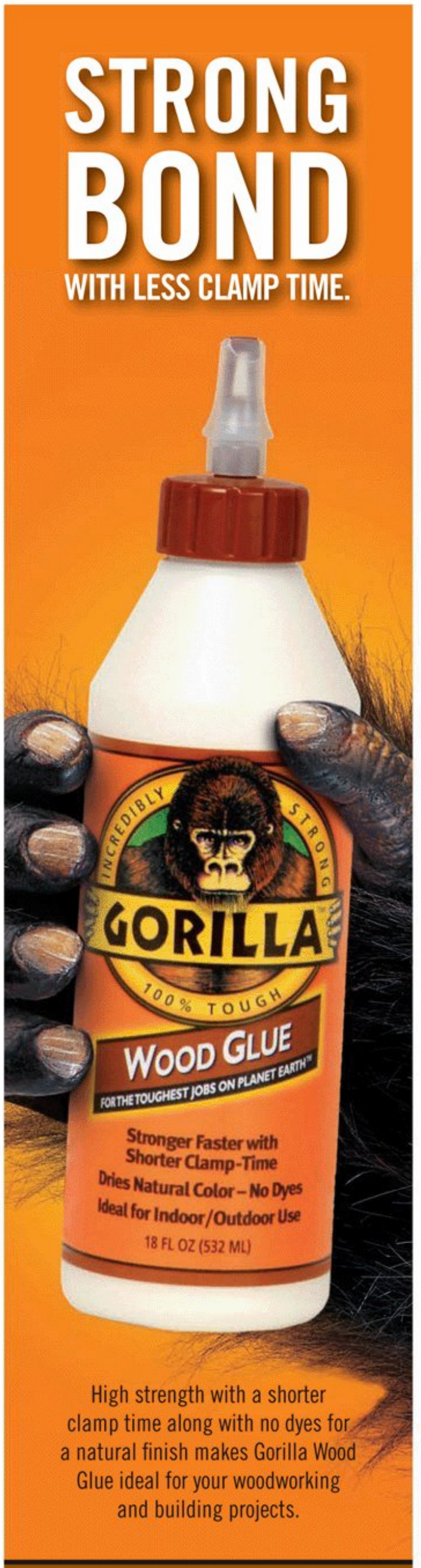
President and Chief Executive Officer **STEPHEN M. LACY**
Chairman of the Board **WILLIAM T. KERR**

In Memoriam — E.T. Meredith III (1933–2003)

Our subscribers list is occasionally made available to carefully selected firms whose products may be of interest to you. If you prefer not to receive information from these companies by mail or by phone, please let us know. Send your request along with your mailing label to Magazine Customer Service, P.O. Box 37452, Boone, IA 50037-0452.

© Copyright Meredith Corporation 2010. All rights reserved. Printed in the U.S.A.
Retail Sales: Retailers can order copies of WOOD for resale by e-mailing jennifer.buser@meredith.com

SUBSCRIBER SERVICE
Go to woodmagazine.com/help or write to
WOOD magazine, P.O. Box 37439, Boone, IA 50037-0439


STRONG
BOND
WITH LESS CLAMP TIME.
INCREDIBLY STRONG
GORILLA
100% TOUGH
WOOD GLUE
FOR THE TOUGHEST JOBS ON PLANET EARTH™
Stronger Faster with Shorter Clamp-Time
Dries Natural Color – No Dyes
Ideal for Indoor/Outdoor Use
18 FL OZ (532 ML)
High strength with a shorter clamp time along with no dyes for a natural finish makes Gorilla Wood Glue ideal for your woodworking and building projects.
FOR THE TOUGHEST JOBS ON PLANET EARTH.®
GORILLATOUGH.COM
1-800-966-3458 Made in U.S.A.
© 2009 Gorilla Glue Company

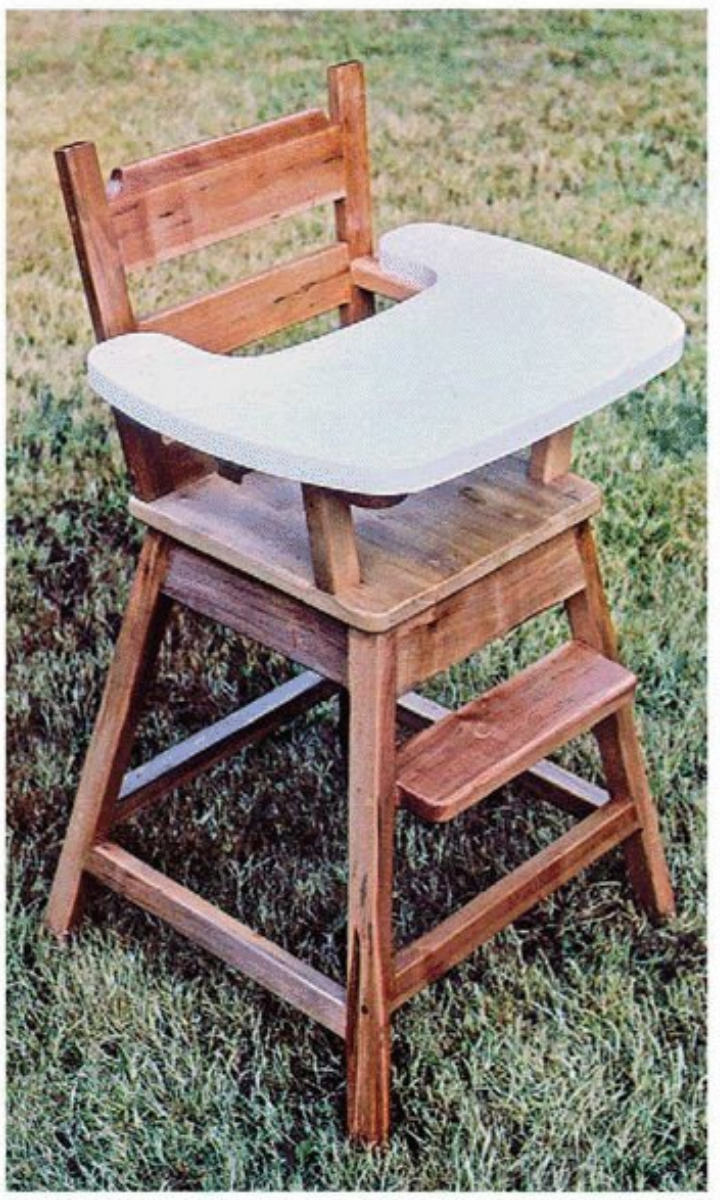
www.journal-plaza.net & www.freedowns.net

Sounding Board

Our bulletin board for letters, comments, and timely updates

Frugal woodworkers share salvage stories

The article on finding and using pre-owned lumber in issue 193 (October 2009, p. 72) apparently struck a nerve with readers. Read on: —WOOD® *magazine editors*



Found wood yields a family heirloom

I made this high chair using the plan from issue 51 (April 1992, p. 56), and all the wood was reclaimed from old pallets. Although it can be tough to combat the frequent defects and nails—and I've gone through a few throw-away saw blades—projects like this don't require a lot of long wood, so pallets work well for me. All five of my grandchildren have eaten from this chair, adding to its special significance to our family.

—Terrence McMillan, Maple Valley, Wash.

Check out auctions and garage sales for gems

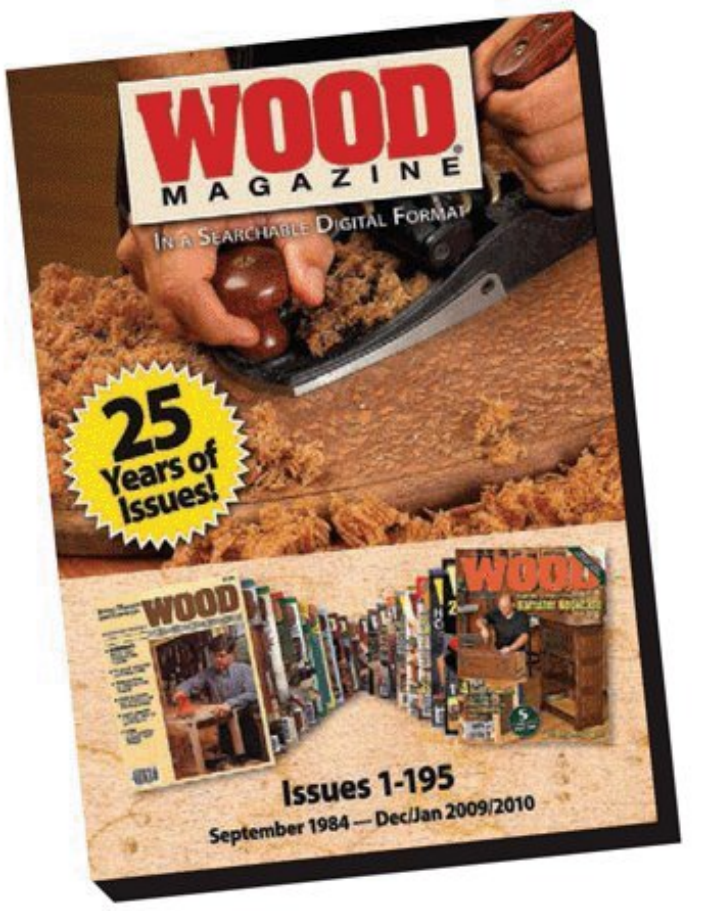
Auctions and garage sales are great sources of reuseable materials, but sometimes you have to look beyond a stack of lumber. I've bought beds and other damaged furniture for as little as $5. If they're too damaged to restore, I dismantle them and use the wood. Headboards usually consist of lots of good, thick wood. One $10 banged-up chest of drawers netted nice white pine boards that became an excellent table.

—James Adams, Monmouth, Maine

From the trash heap to a treasure chest

After reading the article on salvaging lumber, I had to share this photo of a jewelry box I made of wood reclaimed from a beat-up pallet. My co-workers laughed when I saved this wood from the trash bin, but their jaws dropped when I showed them the finished project. The only wood not from that scrap was the walnut splines.

—Rick Stopher, Fulton, Ill.



Now, a FREE single index for the back-issue DVD

Many readers who purchased the 25th Anniversary DVD collection of *WOOD*® magazine's past issues asked us for a single index that cross-references all five discs, rather than separate indexes for each disc. So we've created a comprehensive index that includes every article written from issue 1 through 195. Download this file at woodmagazine.com/dvdindex.

And, because so many of you have ordered the complete set, we found a way to put all of those issues on one disc while maintaining the same high-quality 300-dpi resolution. To learn more about this disc, see the ad on *page 15*.

Please work safely

In order to show you precise details in photos, we frequently remove safety guards. In your work, be sure to use all safety devices, as well as wearing vision and hearing protection.

—WOOD magazine editors

HOW TO REACH US

For woodworking advice:
Post your woodworking questions (joinery, finishing, tools, turning, dust collection, etc.) on one of nine online forums at **woodmagazine.com/forums**.

To contact our editors:
Send your comments via e-mail to **woodmail@woodmagazine.com**; or write to *WOOD* magazine, 1716 Locust St., LS-221, Des Moines, IA 50309.

Subscription assistance:
To notify us of an address change or to get help with your subscription, visit **woodmagazine.com/service**. Or write to *WOOD* magazine, P.O. Box 37439, Boone, IA 50037-0439. Please enclose your address label from a recent magazine issue.

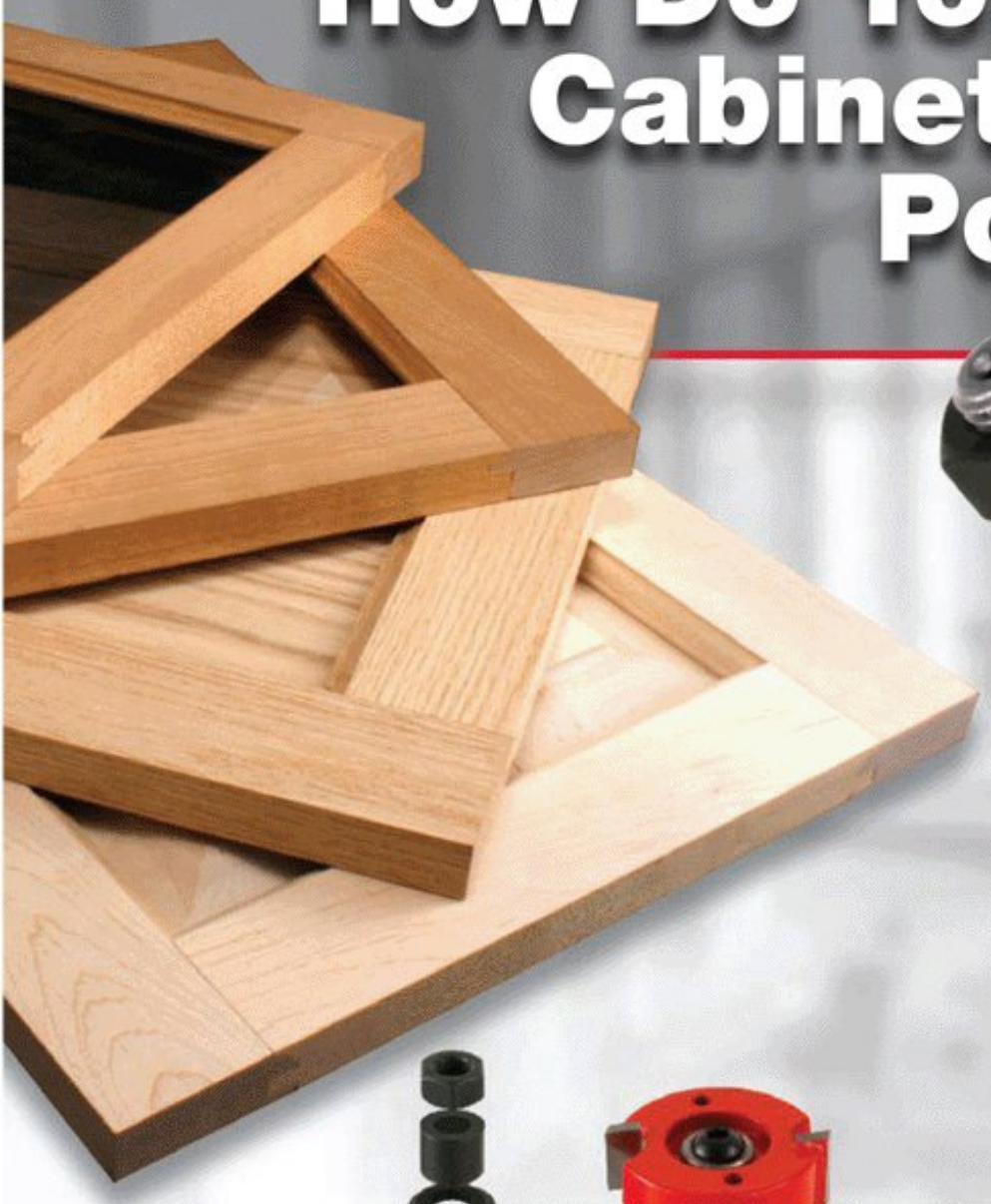
To find past articles:
See our index at **woodmagazine.com/index**.

To order past issues and articles:
For past issues of *WOOD* magazine, our special issues, or downloadable articles, visit our online store at **woodmagazine.com/store**. Some issues are sold out.

Updates to previously published projects:
For an up-to-date listing of changes in dimensions and buying-guide sources from issue 1 through today, go to **woodmagazine.com/editorial**.

www.journal-plaza.net & www.freedowns.net

How Do You Create Endless Cabinet Door Making Possibilities?



Profile Shown:
Round Over
(#99-760)

Patented design allows for multiple rail & stile project combinations

With Freud's New Premier Adjustable Rail & Stile System

Now with Freud's new, patented Premier Adjustable Rail and Stile router bit system, you are able to build any style of cabinet door in a wide range of door thicknesses and sizes! This extremely easy-to-use solution gives you unlimited creative freedom, and solves the long-standing limitations of existing frame and panel door construction.

This one of a kind solution allows you to create extended tenons for extra door joint strength, adjust groove width for different panel thicknesses and choose from a variety of material thicknesses for your stiles and rails (5/8" to 1-1/4"). Optional add-on cutters increase your bits' capabilities even more, allowing you to create glass panel and double sided profile doors.

Four profiles are available; **Round Over** (#99-760), **Ogee** (#99-761), **Round Over Bead** (#99-763), and **Bevel** (#99-764).

Standard stub tenons in regular 3/4" stock

Extended tenons for strong joints in larger doors

Glass & screen panel capability

Double Sided Profiles in thick stock

Another Industry 1st By Freud

freud®
Precisely the best.

To find more information, please go to:
www.freudtools.com/PremierRailandStile

To sign up for Freud's e-mail newsletter or to find a dealer near you visit: www.freudtools.com

Red router bits are a registered trademark of Freud America, Inc. (US) 1-800-472-7307

www.journal-plaza.net & www.freedowns.net

Shop Tips

Helping you work faster, smarter, and safer

Lateral thinking lands a horizontal router

Home-remodeling projects were my "gateway drug" into furnituremaking. But when I asked a trim-carpenter friend how to create traditional dovetail joints to connect the apron to the sides of the 7'-long dresser I designed, he said, "You're an engineer; you'll figure it out." So that's what I did.

Because the apron was far too long and unwieldy to rout the joints on the ends with the typical router table. I needed a long, flat surface for stock support. So I combined my router table and tablesaw into a big horizontal router table. Here's how I did it.

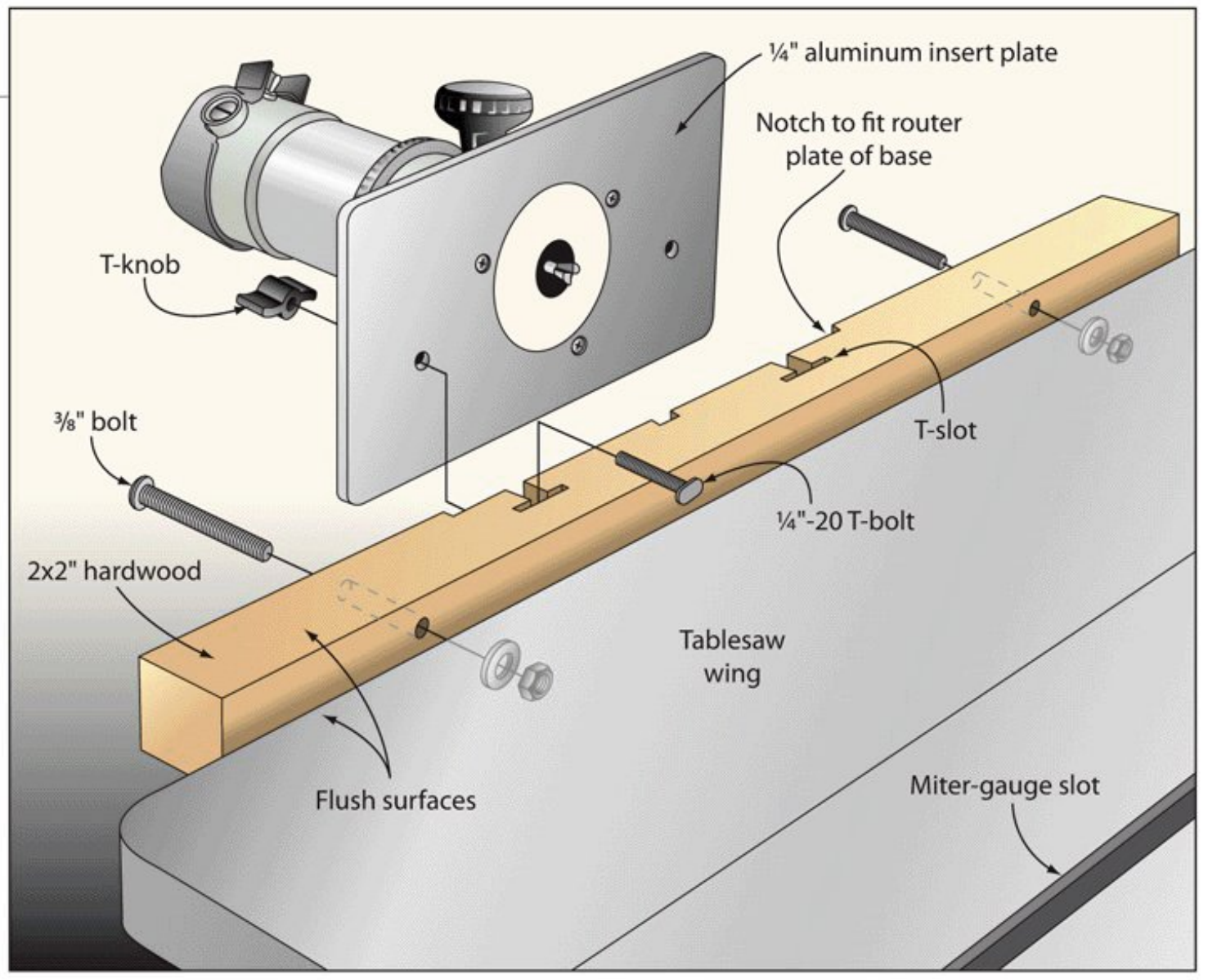
I started by cutting a 2×2" hardwood mounting board to fit the end of my tablesaw table wing, and made a notch in one face wide enough to fit my router table's insert plate, as shown *at top*. After removing the router and insert plate from my router table, I drilled a pair of ¼" holes in the plate, 2" from the bit opening on either side.

I used these holes to locate T-slots on the mounting board, and then routed the slots 1¼" deep using a T-slot cutting bit. Next, I marked and drilled 7/16" holes to mount the board to the wing, steering clear of the webbing under the wing. I then clamped the mounting board flush to the wing, and used those holes to guide the bit while drilling two 7/16" holes through the edge of the wing. Finally, I bolted the board to the wing.

I reattached the router to the insert plate, installed the dovetail bit, and mounted the plate to the board using T-bolts, as shown. With the T-bolts snug, but loose enough to allow movement of the plate, I turned on the router and lowered the dovetail bit into the mounting board.

I made test cuts in scrap and adjusted the height of the insert to perfect the fit of the dovetail. Then, I used my miter gauge with a long extension and pushed the aprons across the table to rout the dovetails.

—Roger Franzel, Brookfield, Wis.



Top Shop Tip

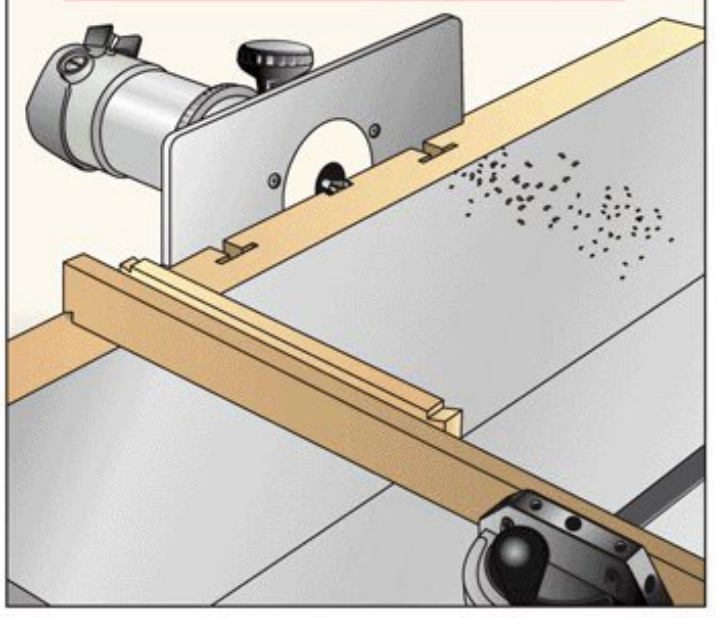


Photo: Jennifer Brindley of JBe Photography

For sending in this issue's Top Shop Tip, Roger receives a Shop Fox W1668 oscillating drill press. Right on, Roger!

You Could Be Next Issue's Top Tipster!

Tell us how you've solved a workshop stumper. If we print it, you'll get $100 and a copy of *450+ Best-Ever Shop Tips* (woodmagazine.com/450tips). And, if your idea garners Top Shop Tip honors, we'll also reward you with a tool prize worth at least $300.

Send your best ideas, along with photos or drawings and your daytime phone number, to: **Shop Tips, WOOD Magazine, 1716 Locust St., LS-221, Des Moines, IA 50309-3023**. Or, by e-mail: shoptips@woodmagazine.com. Include your contact info in the e-mail.

Because we try to publish original tips, please send your tips only to *WOOD*® magazine. Sorry, submitted materials can't be returned.

www.journal-plaza.net & www.freedowns.net

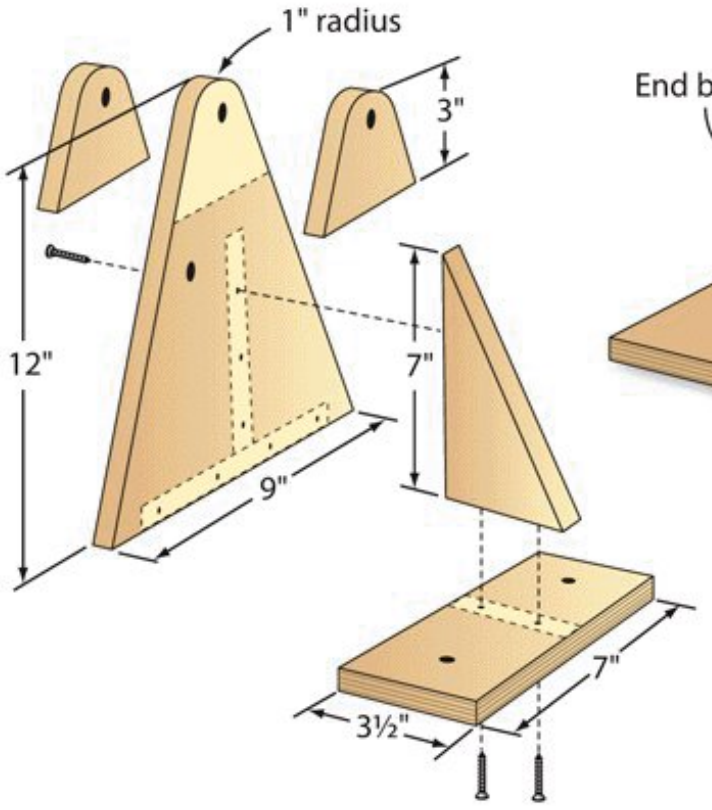
Shorten the "Journey to the Center of Gravity"

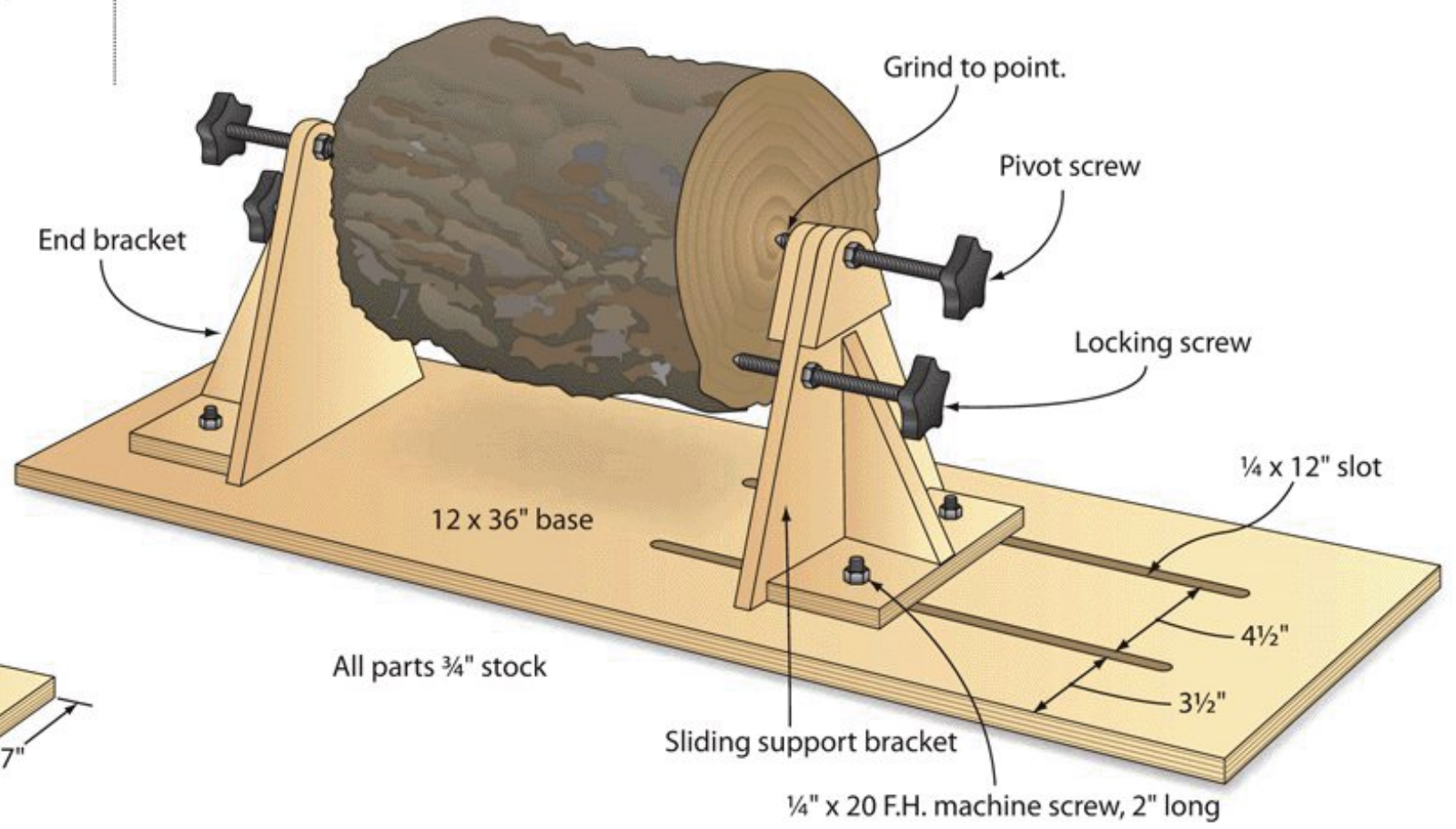
Finding the center of gravity of an oversized, irregular log or turning blank often involves chucking, testing, and rechucking dozens of times. To speed up the process, I came up with this jig that mimics the headstock and tailstock of a lathe.

First, you chuck the blank into the jig as you would in your lathe. Then, simply let the blank rotate. The heaviest section will settle at the bottom.

Rotate the blank 180°, lock it in place with the locking screws and use your chainsaw to nibble away material on the heavy edge. Release the locking screws and repeat the process until the blank is balanced and ready to turn on your lathe.

—Philip Olsen, Kaslo, B.C.





continued on page 10

Breathe Easier with a One Stop Dust Collection Solution

With 20 years experience and a superior product line, the experts at Penn State Industries will provide you effective solutions for a cleaner shop.

INTRODUCING
The TEMPEST™ Portable
2 HP Cyclone Dust Collector
ONLY $895
(plus shipping)
#TEMP2PCX

- 1025 CFM • Great filtration
- Ideal alernative to a double bag collector
- Roll up to your work anywhere
- Features maintenance free recirculating cleanout

TEMPEST ™ S-series Cyclones
- ▲ 2.5HP - 1450CFM - $995
- ▲ 3.5HP - 1700CFM - $1125
- ▲ 5.0HP - 1800CFM - $1395

Premium Ductwork
- ▲ Pipe for maximum airflow
- ▲ Fittings and hoods for most applications

Ductwork Planning Service
- ▲ An accurate layout of your shop to save you hours of planning

More Collection Solutions
- ▲ High performance bag-style collectors, air cleaners and portable collectors ideal for any size home shop

2 GREAT WAYS TO SAVE

FREE DUCTWORK PLAN

& $100 OFF
any TEMPEST™ cyclone collector.
Call for details and mention code: WOOD7
Offer expires: 7/1/2010

Call Bill for your free consultation at 1-800-377-7297 x16 to help you plan the best solution for your shop or CNC application.

Penn State Industries

1-800-377-7297 • www.pennstateind.com/nodustwm

www.journal-plaza.net & www.freedowns.net

WOODLINE USA

QUALITY CARBIDE ROUTER BITS, SHAPER CUTTERS & MUCH MORE!

EASY ORDERING! 24 HOURS A DAY, 7 DAYS A WEEK

1-800-472-6950

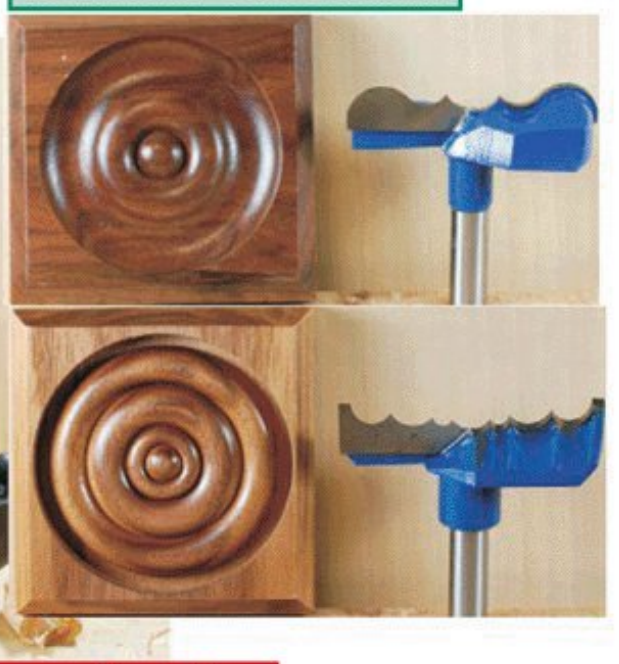
Order online or view our catalog at www.woodline.com

Our instructional DVDs will help you with your tools and projects.

Bowl & Tray cutters along with a variety of templates available at www.woodline.com

We now carry a full line of quality woodturning tools and wooden hand planes.

13 Rosette Profiles available



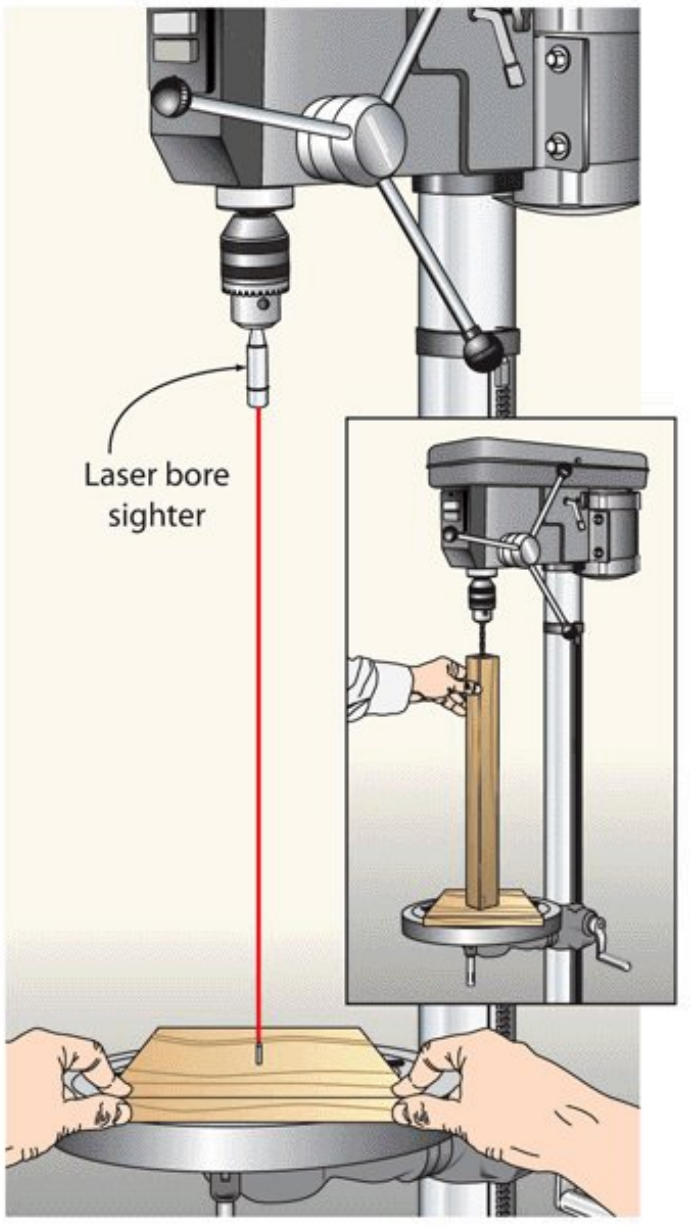
Gift Certificates available

Shop Tips

Sighting in on centered spindle holes

To align the legs on a set of bunk beds, I came up with this method to precisely center a hole using a laser bore sighter for rifles (Bushnell item 740100C, $25, 800-423-3537, bushnell.com). First make a plywood base with a nail or screw sticking up through it. Mount the bore sighter in your drill press chuck. Then position the base so the laser points straight into the point of the nail, and clamp the base securely in place. Replace the bore sighter with the correct drill bit. Mark the centers on both ends of the spindle and press one end, centered, onto the nail point. Now, by drilling into the top center mark, you drill precisely on axis and down the center of the spindle.

—Mark Lutz, The Dalles, Ore.



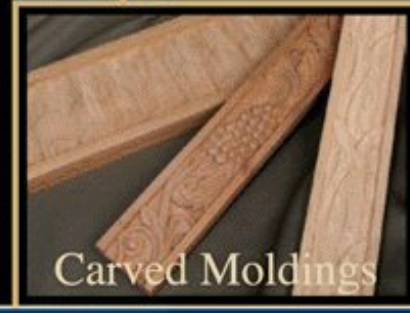
continued on page 12

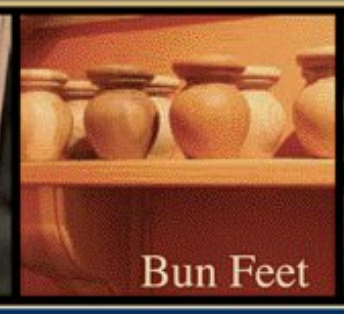
Find FREE plans for your shop at woodmagazine.com/freeplans

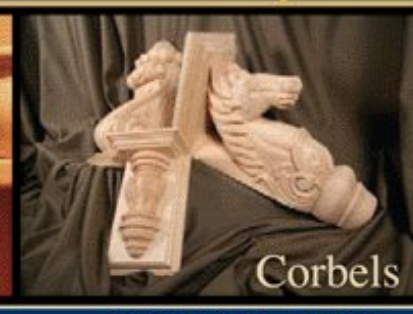
www.journal-plaza.net & www.freedowns.net

OSBORNE
Wood Products, Inc.

Carefully Crafted Fine Quality

Wood turnings and components from
Osborne Wood Products, Inc.
are the perfect complement for your
woodworking projects.

Carved Moldings


Bun Feet

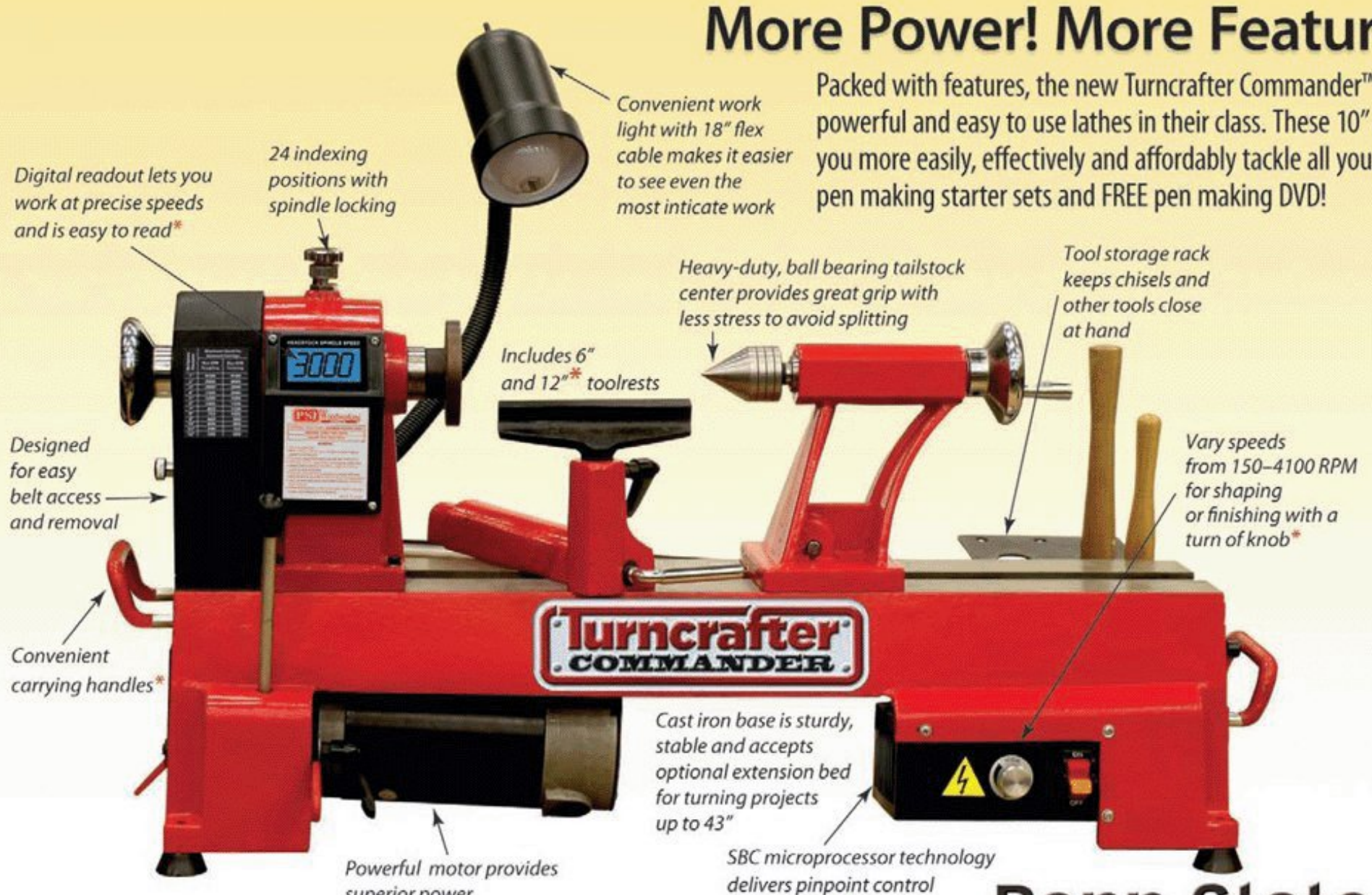

Corbels

WWW.BUN-FEET.COM 866.963.5580

The new Turncrafter Commander Midi Lathes

More Power! More Features! More Fun!

Packed with features, the new Turncrafter Commander™ Midi Lathes are the most advanced, powerful and easy to use lathes in their class. These 10" and 12" swing workhorses will help you more easily, effectively and affordably tackle all your turning projects. Ask about our pen making starter sets and FREE pen making DVD!


Digital readout lets you work at precise speeds and is easy to read*
24 indexing positions with spindle locking
Convenient work light with 18" flex cable makes it easier to see even the most inticate work
Heavy-duty, ball bearing tailstock center provides great grip with less stress to avoid splitting
Tool storage rack keeps chisels and other tools close at hand
Includes 6" and 12"* toolrests
Designed for easy belt access and removal
Vary speeds from 150–4100 RPM for shaping or finishing with a turn of knob*
Convenient carrying handles*
Cast iron base is sturdy, stable and accepts optional extension bed for turning projects up to 43"
Powerful motor provides superior power and performance
SBC microprocessor technology delivers pinpoint control and reliability*

$399.95 (shown)
SAVE $100
12" Swing 1HP Variable Speed
#TCLC12VS *(UPS $50)*

$299.95
SAVE $100
10" Swing 3/4HP Variable Speed
#TCLC10VS *(UPS $45)*

$224.95
SAVE $75
10" Swing 3/5HP Multi Speed
#TCLC10 *(UPS $45)*

* Variable Speed versions only

Penn State Industries
1-800-377-7297 www.pennstateind.com

www.journal-plaza.net & www.freedowns.net

Turn Your Festool CT Vacuum into a Super Cyclonic Dust Extraction System.

Made in the USA

Dust In

New!

"This works better than I could have ever imagined!"
Leonard Peeples - Florida

U.S. Pat.#7,282,074
E.U. Pat. Pend.

99%+ Dust Capture

- Big 9 gallon capacity dust box tackles planers, moulders and routers.
- Easily latches to the Festool CT Vacuum with no additional hardware.

Vacuum and Festool Hose Not Included.

Kit shown here designed to fit Festool shop vacuums - Introductory Price $229.00

Kit contains Cyclone, 9 gal. dust box, hose and connecting elbow. Can also be used with any shop vacuum.

The Dust Deputy works wet or dry with any shop vacuum.

The Original Dust Deputy

Go to www.dustdeputy.com to see video of the system in action.

Oneida Air Systems

Also Available at Rockler & Woodcraft Stores.

Dust Collection Since 1993.

Call Today for FREE Catalog!
1.800.732.4065

Order Online!
www.oneida-air.com

Shop Tips

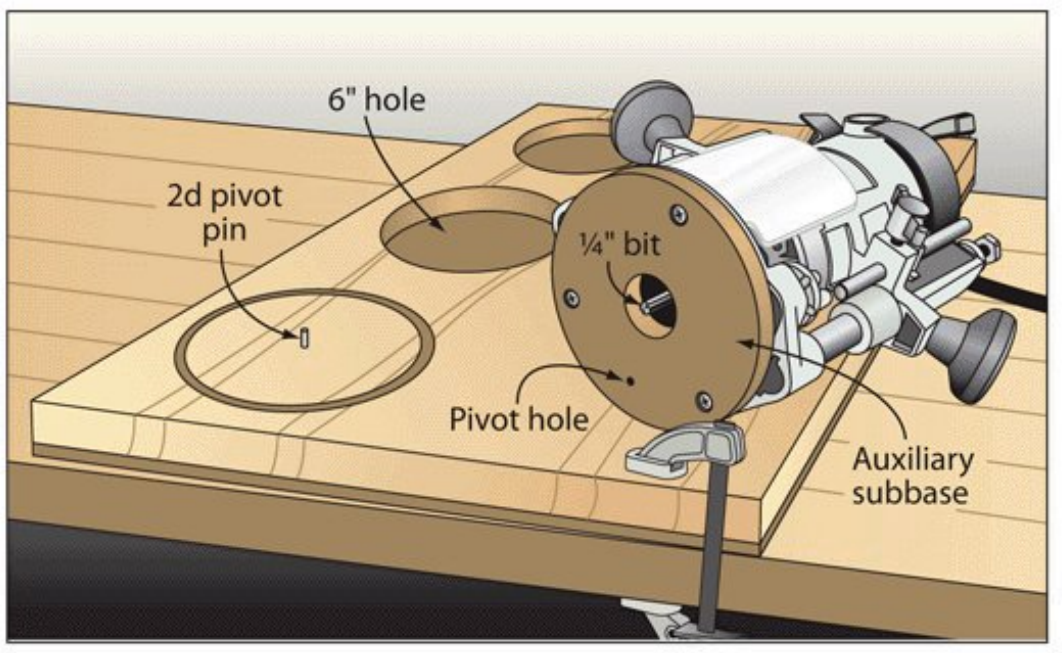
Mini-trammel for mini-circles

I recently completed a project that required several 6" holes. I quickly discovered the 3" radius was too small for most router trammels. Here's one solution you can use.

Lay out your circle using a compass, drill a 5/64" hole in the center, and fit a 2d nail in the hole. Make an auxiliary subbase for your plunge router out of 1/2" MDF, and drill a 5/64" pivot hole 2 7/8" from the center of the bit hole (3" for the radius, minus the radius of a 1/4" straight bit). Install the subbase, and clamp the workpiece to your bench on top of a backer board. Fit the hole in the router base over the nail and rout the hole by plunging and swinging the router around the nail.

To make 6" *discs* rather than holes, change the distance of the pivot hole from the base center to 3 1/8" (the distance of the 3" radius plus half the radius of the 1/4" straight bit).

—George Noeth, Fort Mill, S.C.

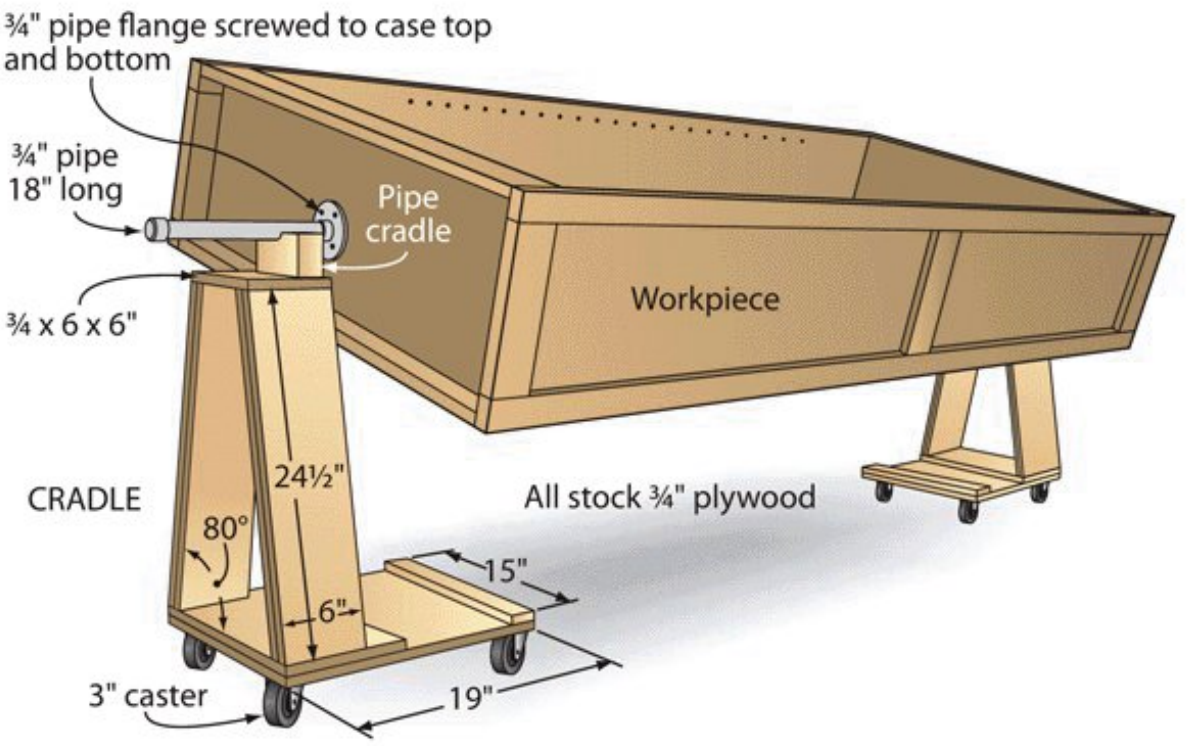


Ready-to-roll cradles provide easy finishing access

This large-project "rotisserie" has come in handy a few times in my small shop. With it I can rotate projects by myself in order to access all sides for finishing. It acts as a drying rack after finishing, and I can roll the project out of the way if I need extra shop space between coats of finish.

Just screw the pipe flanges to the top and bottom of the case where the holes won't be seen. Thread in the 3/4" pipe and rest each end in one of the cradles.

—Dave Gruenhagen, Boise, Idaho

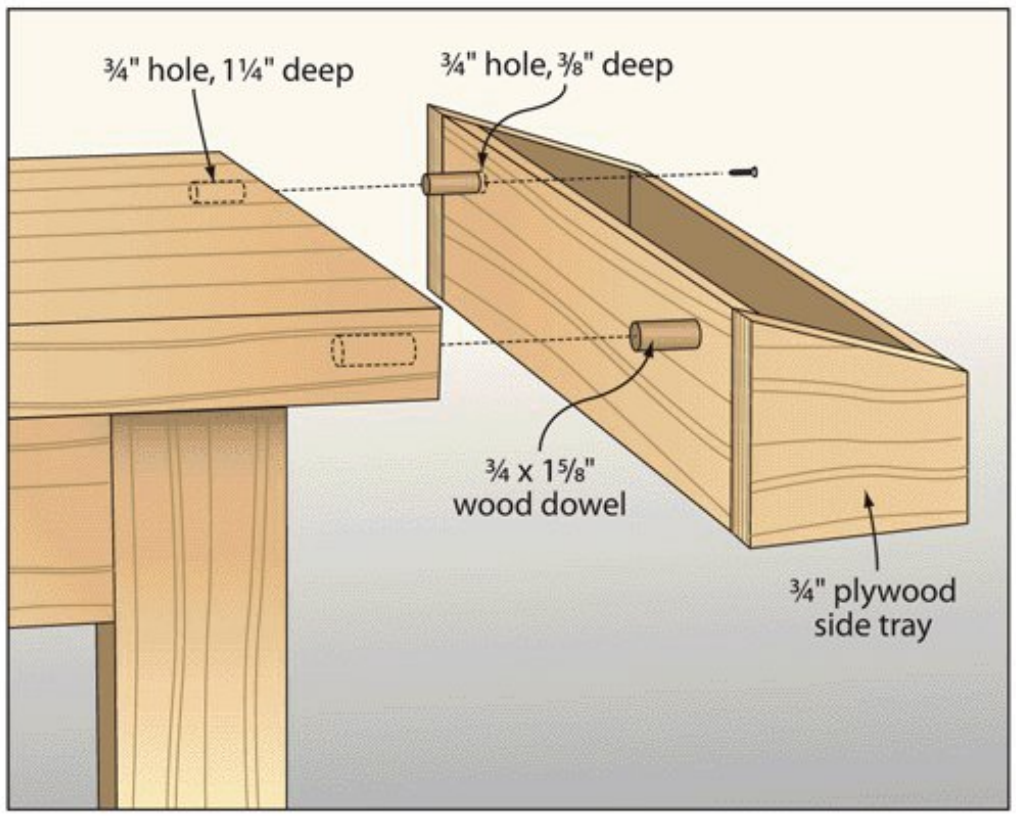


www.journal-plaza.net & www.freedowns.net

Tool storage is a real cliffhanger

I came up with this tray that mounts to the edge of my workbench to provide extra storage for hand tools, preserving valuable benchtop real estate. If I need it out of my way, the tray slides right out. To mount your own tray, simply bore ¾" holes 1¼" deep to accommodate the dowels in the back of the tray.

—Mark Thiel, Coral Springs, Fla.



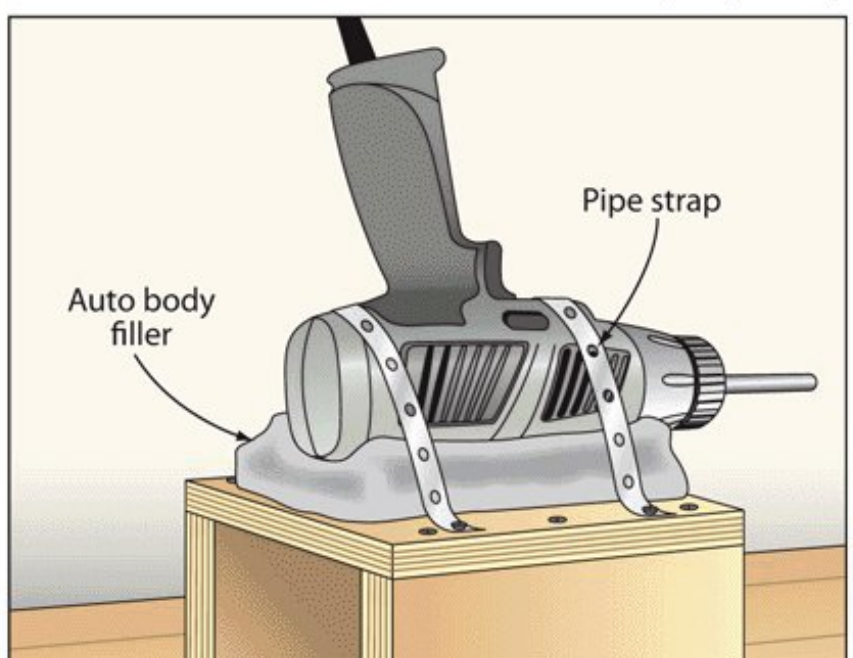
Mounting method for the uneven tool

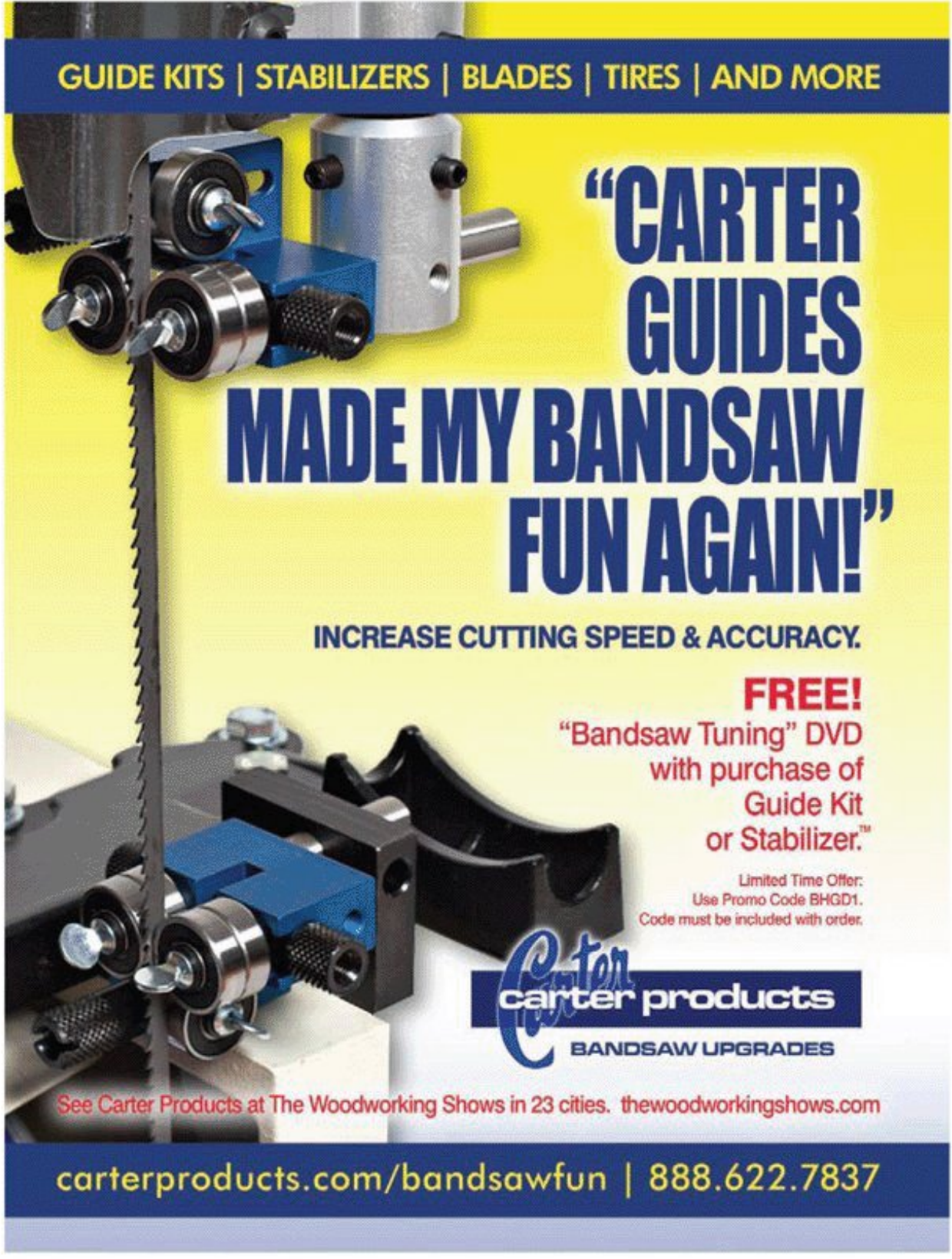
I needed to use my portable drill as a temporary, poor-man's lathe, but its irregular shape made it difficult to clamp down. So I made a custom tool holder shown *below*.

Start by making a scrapwood base to raise the tool above bench height. Next, wrap the tool in kitchen plastic wrap to protect it temporarily, place a generous blob of auto body filler (such as Bondo, 3M.com, 888-364-3577) on the base, and press the tool into the body filler taking care to not block controls and ventilation holes. While the filler is still pliable, level or adjust the tool position as needed.

After the filler hardens, remove the tool and discard the plastic wrap. And finally, secure the tool to the stand with pipe strap. You can use this method for other odd-shaped tools, such as a belt- or random-orbit sander.

—Tod Jervey, Powell, Ohio




GUIDE KITS | STABILIZERS | BLADES | TIRES | AND MORE
"CARTER GUIDES MADE MY BANDSAW FUN AGAIN!"
INCREASE CUTTING SPEED & ACCURACY.
FREE!
"Bandsaw Tuning" DVD with purchase of Guide Kit or Stabilizer.™
Limited Time Offer: Use Promo Code BHGD1. Code must be included with order.
Carter
carter products
BANDSAW UPGRADES
See Carter Products at The Woodworking Shows in 23 cities. thewoodworkingshows.com
carterproducts.com/bandsawfun | 888.622.7837

Refinish Your Future.
Own your own business.
Let your passion for furniture lead you into a new business with a Furniture Medic franchise. We're a complete on-site repair and restoration-refinishing business servicing homes and companies as well as handling moving and insurance claims. We offer extensive training and support with a low initial investment and manageable overhead. Financing is available to qualified candidates and franchises are offered nationwide. Call today to brush up on the details.
FURNITURE MEDIC
"the prescription for damaged furniture"
www.furnituremedicfranchise.com
1•800•RUN YOURS

www.journal-plaza.net & www.freedowns.net

4-WAY MONEY MAKER
MOLDS • PLANES • SANDS • SAWS

Own a 4-in-1 MOLDING FACTORY!

Quick-Change Molding Head

Commercial-Duty Planer

Power-Feed Drum Sander

Gang Ripsaw Attachment

Now, turn a $5.00 rough board into $75.00 worth of high-dollar molding in minutes. Make over 500 patterns, plus curved molding, tongue & groove, picture frame stock, custom designs. **QUICKLY CONVERTS** from **Molder/Planer** to **Drum Sander** or **Multi-Blade Ripsaw.** Made in U.S.A. 5-Year Warranty. 12", 18" or 25" models available.

***NEW!* SHAPE 3 SIDES IN 1 PASS!**

Turns your Woodmaster into a **POWERFUL 3-SIDE MOLDER** that efficiently & AFFORDABLY cuts T&G flooring, paneling, & more!

Call now for FREE DVD!

FREE DVD & BUSINESS STARTER KIT!

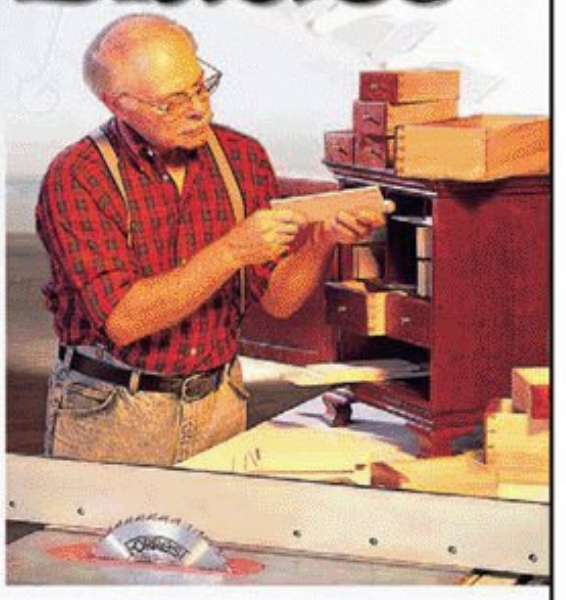
Call TOLL FREE 1-800-821-6651 Ext. P349

Woodmaster Tools, Inc. Dept. P349,
1431 N. Topping Ave., Kansas City, MO 64120 **www.woodmastertools.com**

Forrest Blades

Serious woodworkers count on American-made Forrest saw blades for smooth, quiet cuts, everytime... without splintering scratching or tearouts. No matter what your application, Forrest blades are simply the best money can buy. That's why discriminating craftsmen prefer them!

"[Your blades] cut true, with no vibration. I can say with confidence that Forrest blades are the best."
Carl Stude – Burbank, CA



Our Most Popular Saw Blades:

Woodworker II - This award-winning all-purpose blade is the finest of its type.

Chop Master - Produces perfect miters with smooth edges... and no bottom splinters.

Ask for Forrest blades at a fine dealer or retailer, order online, or call the factory directly. Your satisfaction is guaranteed... or your money back!

FORREST
The First Choice of Serious Woodworkers Since 1946

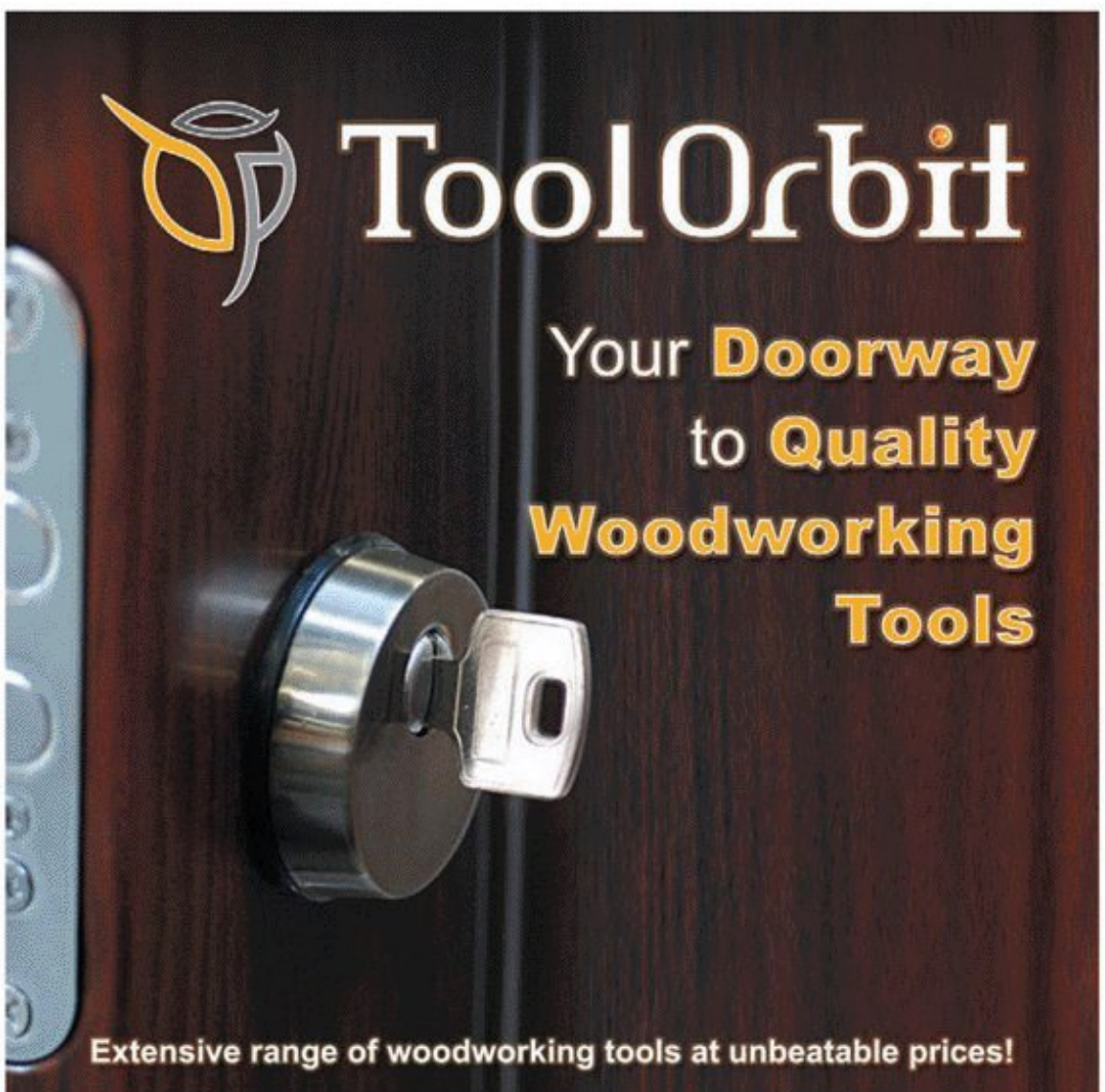
www.ForrestBlades.com
1-800-733-7111
(In NJ, call 973-473-5236)

Woodworker II	Chop Master	Duraline Hi-AT	Dado King
Fine Woodworking	Woodshop News	Woodshop News	Wood Magazine
Editors' Best Overall Choice	Woodshop News 2007 Readers' Choice Awards	Woodshop News 2007 Readers' Choice Awards	Wood Magazine Top Tool Approved 2008

©2010 Forrest Manufacturing Code WM

ToolOrbit

Your **Doorway** to **Quality Woodworking Tools**



Extensive range of woodworking tools at unbeatable prices!

Milwaukee · POWERMATIC The Golden Standard · JET · DELTA
BOSCH · PORTER CABLE · Makita · DEWALT

www.ToolOrbit.com 888-722-8299

Hartville Tool

SINCE 1972
OHIO'S LARGEST TOOL STORE!

100 PC. Rare Earth Magnet Value Pack
Item # K10369

For A Limited Time
SAVE 60%
Only! $15.98
Reg $39.99
Offer Valid for 90 days

Special Value Pack Includes:
45 ea. 1/4" Magnet # 10369
30 ea. 3/8" Magnet #10370
25 ea. 1/2" Magnet # 10371

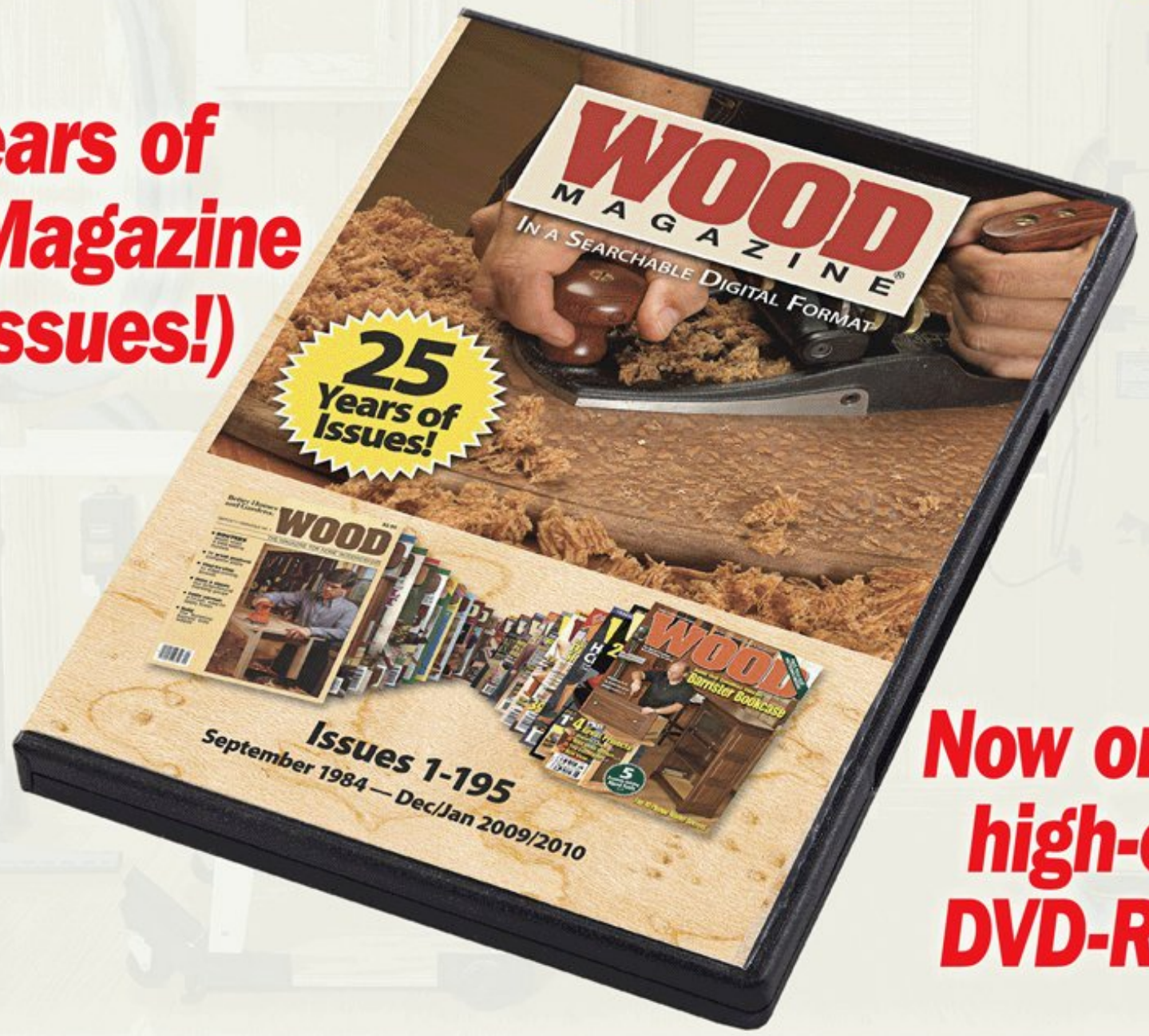
FREE! SHIPPING
On Orders Over $99
(Lower 48 States)

FREE Catalog!

hartvilletool.com
800-345-2396

The quickest, easiest way to find the best woodworking ideas and projects

25 Years of WOOD Magazine (195 issues!)



Now on a single high-capacity DVD-ROM disc!

Readers told us they wanted all 195 back issues on one disc, with a single, comprehensive, searchable index. So we did just that, while maintaining the super-high-quality, 300-dpi resolution, ensuring you crystal-clear illustrations and photos.

DVD features:

The user-friendly index of all back issues makes it easy to find any project plan, shop tip, or skill-builder from this huge archive. Click on the indexed article and go to it instantly! Or browse through the issues using the prominent bookmarks, linked covers, and table of contents. There, too, one click takes you to the information you need.

High resolution PDFs make for easy, enjoyable reading. View every photo, drawing, and detail in digitally reproduced, crystal clarity. Zoom in for a closer look, or print articles for use in the shop with the handy "Print this article" button.

Free up shelf space in your home and shop: The disc and protective case fits 195 issues into the space of a slim paperback.

Save hundreds of dollars versus buying back issues. In fact, many of the most sought-after issues on this disc have been out of print for years and are no longer available in any other format.

Compatible with PC and Mac. If you don't already have it, Adobe Reader is included on the disc for viewing.

Where else will you find more than...

295 Furniture Projects

525 Tool Reviews and Features

230 Shop Projects

1,515 Shop Tips

900 Weekend Projects

765 Skill-building Techniques

Order online at **woodmagazine.com/DVDlibrary** or by phone at **888-636-4478**

WD0510

www.journal-plaza.net & www.freedowns.net

A jig guarantees perfect pilot-hole placement on every drawer front. The tape flag sets the holes' depth.

Drawer-pull Jig

Mount every type of pull precisely with this quick-to-make drilling guide.

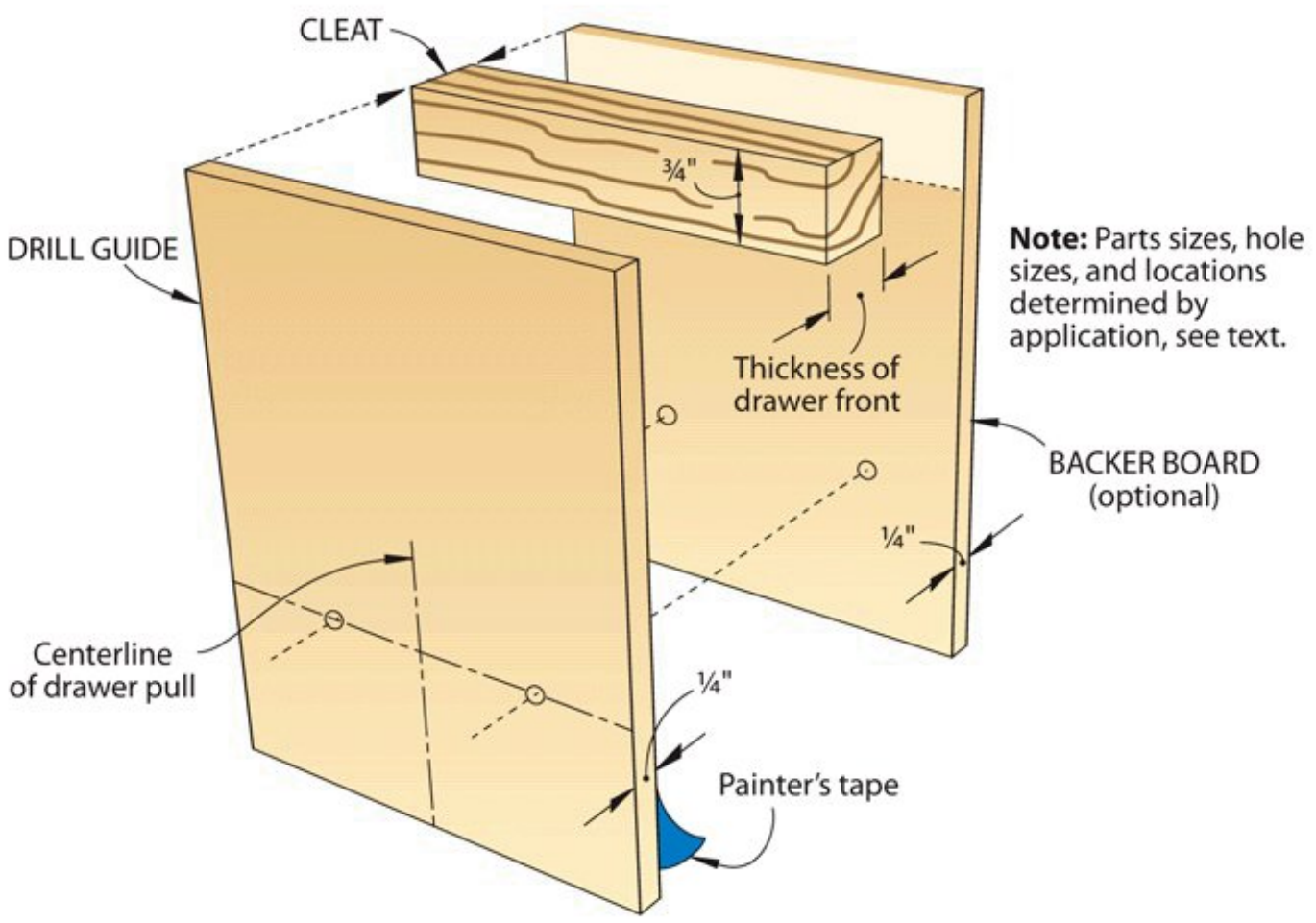
Installing a drawer pull or two is no problem: A couple of measurements take care of it. But for a project with lots of drawers, such as the Media Cabinet on *page 70*, an out-of-line pull would stick out like a Hummer in a lot full of hybrids. Positioning the pull mounting holes with a jig custom-made for the project guarantees uniform placement every time.

Sizing your jig

The jig consists of only three parts—and for some applications, just two [**drawing**]. Make the cleat from solid wood to match the thickness of the drawer fronts. For the drill guide and optional backer board, ¼" plywood or hardboard works well. Cover the back face of the drill guide with painter's tape to prevent marring the finish on the drawer.

The size of the drawer front determines the sizes of the drill guide and backer board. For the Media Cabinet, we matched the drill guide to the width of the drawers. That made it easy to align by matching the edges of the jig to the ends of the drawer fronts, *top*. For wider drawers, like the ones on *page 18*, size the jig just an inch or so wider than the screw holes in the pull.

continued on page 18



Note: Parts sizes, hole sizes, and locations determined by application, see text.

www.journal-plaza.net & www.freedowns.net

Finally, a flooring saw designed to work in the room you're flooring.

SKIL®

Do it right. Do it with Skil.™

Rip, cross-cut and miter. Now, one saw does it all. You've never seen a saw that makes flooring so simple – because, until now, there's never been one. No need for two saws. No more up and down and back and forth to cut planks in the garage. Lightweight, portable and easy to use, our new floor saw lets you rip, cross-cut, miter and lay laminate, hardwood and engineered flooring – all in one place. Yet another SKIL innovation that helps you work quicker and smarter than ever. **Learn more at skiltools.com/en/flooringsaw**

skiltools.com

www.journal-plaza.net & www.freedowns.net

To ready the jig for use, draw a centerline on the drill guide and lay out the pull's screw locations from this centerline. Place a piece of painter's tape on the drawer front and mark on it the centerline of the pull. Slip the cleat onto the top of the drawer front and align the centerlines.

There are three types of drawer fronts; each requires a slightly different set of holes in the jig. Let's look at each of these variations of the jig.

For screwed-on pulls

For pulls that require pilot holes for wood screws (such as those on the Media Cabinet, **opening photo**), build the jig without the backer board. Lay out the locations of the pilot holes. Then, to prevent drilling through the drawer face, wrap a tape flag around your drill bit to act as a depth stop.

For through holes

Pulls secured from the back by a machine screw require a jig with all three parts. The backer board prevents chip-out as the bit exits the hole. After laying out the shank-hole locations on the jig, clamp or hold the jig securely to the drawer front [**Photo A**] and drill the shank holes.

For false fronts with counterbores

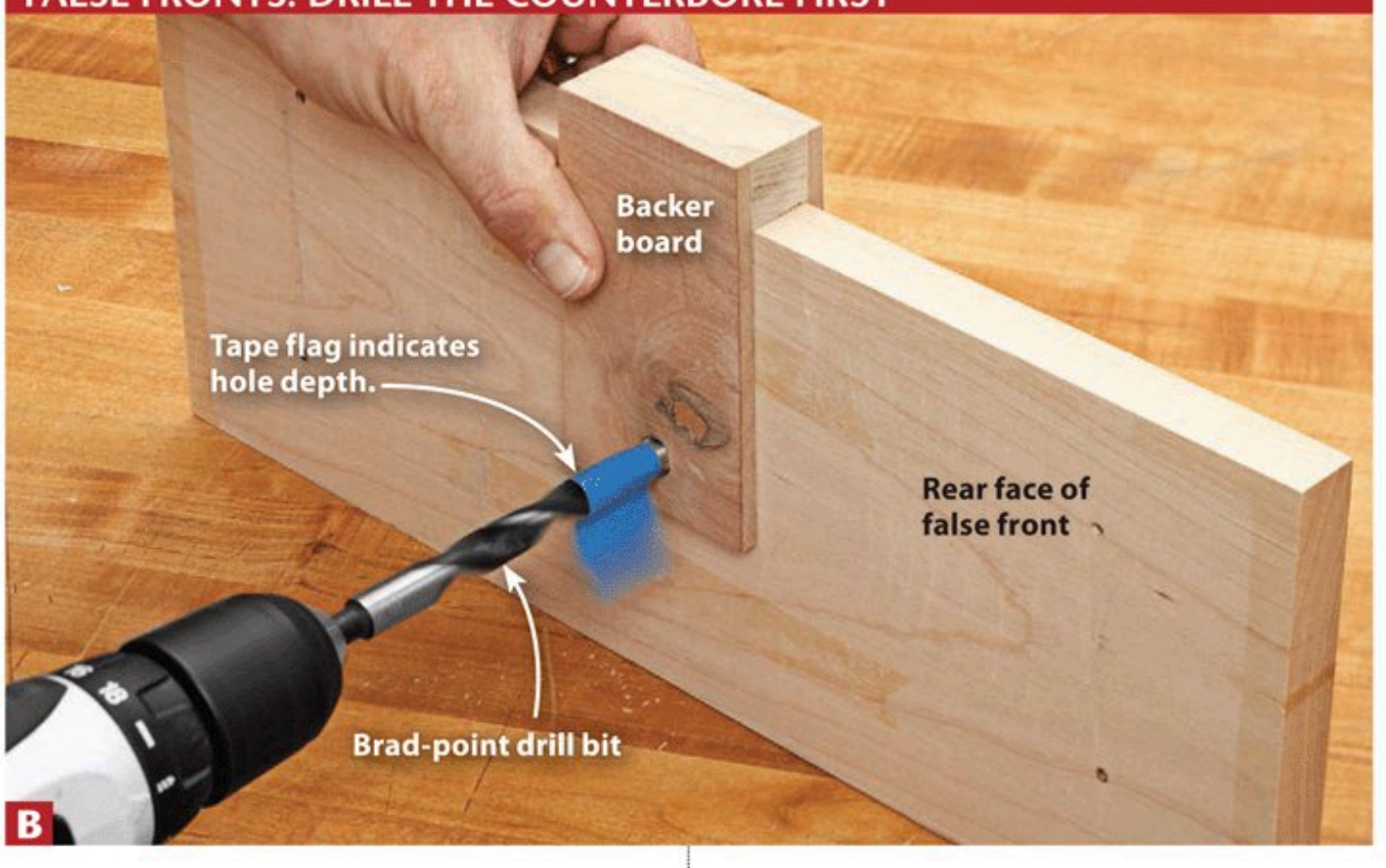
When using pulls secured from the rear of a false drawer front, the head of the machine screw must rest in a counterbore so the false front can be screwed flush to the front of the drawer box. In this situation, you'll need a jig with a counterbore-size hole in the backer board and a screw-shank-size hole in the drill guide.

Lay out the location of the shank holes on the drill guide. But before drilling them, place a scrap between the drill guide and backer board and bore completely through the jig with a 1/16" bit. Then switch to the shank-hole-diameter bit and enlarge the hole in the drill guide only. Next, change to a Forstner or brad-point bit the diameter of the counterbores. Place the spur of the bit on the 1/16" hole in the backer board, drill through the backer only, then toss the scrap away.

To use the jig, place it over the drawer front and drill the holes as shown in **Photos B and C**.

THROUGH HOLES: THE BACKER BOARD PREVENTS CHIP-OUT

FALSE FRONTS: DRILL THE COUNTERBORE FIRST



FALSE FRONTS: FINISH WITH THE SHANK HOLE

www.journal-plaza.net & www.freedowns.net

WOODCRAFT®

**For A Free Catalog Or To Find Your Local Woodcraft Store,
Visit woodcraft.com Or Call 800-225-1153.**

When woodworking is your passion, quality tools, supplies and expert advice from Woodcraft can help take your woodworking to the next level.

Over 20,000 Woodworking Products!

- Hand & Power Tools
- Power Tool Accessories
- Routers & Accessories
- Carving Tools & Chisels
- Workbenches
- Hardwoods & Exotics
- Sanding & Scraping
- Woodburning
- Vises & Clamps
- Files & Rasps
- Project Kits & Supplies
- Clock Supplies
- Planes & Saws
- Woodboring Tools
- Sharpening Supplies
- Finishing Supplies
- Safety Equipment
- Woodturning
- Hardware
- Marking & Measuring
- Cabinetmaking Supplies
- Shop Accessories
- Books & DVDs

Our Exclusive Brands:

Woodcraft offers exclusive products to our customers!

PINNACLE® Wood River®

Classic® PROJECT PLANS HIGHPOINT

Our Magazine:

WOODCRAFT® magazine Publishes Six Great Issues A Year!

10WI05P

QUALITY WOODWORKING TOOLS • SUPPLIES • ADVICE®

www.journal-plaza.net & www.freedowns.net

The Shop Monkey

Don't be afraid... he's trained.

Monkey Business

I love family vacations. My wife and sons and I talk about the adventures we'll experience when we get to our destination. To make the most of our travel time, we sometimes enlist a trip planner to give us turn-by-turn directions and include suggestions for interesting side trips and attractions.

In the same way, I appreciate the help offered in woodworking plans, which serve as a road map for completing a project and offer tips for getting the best results. So, when I stumbled across a Web site offering me more than 14,000 plans for $49, well... they had my attention! Skeptical, but curious, I took a deep breath and ponied up the money to see what 50 bucks would get me.

The site was nice, but downloading all of those plans was going to choke my Internet bandwidth. For an extra $10, the site said, I could get a CD of the plans mailed to my home. So I did.

When the CD arrived, I popped it into my computer and found an impressive list of folders with PDF plans thoughtfully categorized by project types. Bedroom sets. Workshop stuff. Outdoor projects. The works. Each folder was chock-full of plans. They even threw in software so I could read and print the plans without having to download anything.

Great deal, right?

Not so fast. First of all, there are only about 6,300 plans on the disc, and many of them were simply repeated—without explanation. And, about half of the "plans" I looked at were merely measured drawings. Not a word about technique or any project tips. Some woodworkers might be able to build it from a bare-bones drawing, but for most of us, that'd be like to trying to drive from Tampa to Des Moines without a road map or GPS unit. It might be fun, but expect to make a lot of wrong turns along the way, and plan to spend twice as much.

Often, it appeared that the CD maker literally ripped plans from woodworking magazines or books and just scanned them, and at such low quality that it was often difficult to make heads or tails out of them. In others, important details—such as exploded-view drawings and cut lists—are simply not there. Or they were so poor as to be useless. Others were obviously downloaded from well-known magazine sites, still branded with the name of the magazine or Web site they were taken from.

Finally, I'm going to go way out on a limb and guess that the people assembling these discs haven't actually gone to the sources to get permission to reproduce the plans. The whole idea of someone making money off the hard work of others really doesn't sit right with me.

The best way to find woodworking plans is to go to the source. Either buy the books or borrow them from the library, subscribe to the magazines, or download the plans from the owner's Web site. Not only will you get the fully detailed, step-by-step instructions, you also support the woodworkers who painstakingly designed the project.

Bottom line: Whether you're buying plans or road-tripping with a GPS, heed that little voice that's guiding you to do the smart thing.

The Shop Monkey (aka Tom Iovino of Tampa, Fla.) blogs prolifically at woodmagazine.com/shopmonkey.

www.journal-plaza.net & www.freedowns.net

The facts are hard to ignore.

Titebond® III outperforms polyurethane glues.

WOOD MAGAZINE TOP GLUE APPROVED

As the leader in wood glues, we want you to know the truth about polyurethane glue and woodworking. A straightforward comparison between Titebond® III Ultimate Wood Glue and polyurethane glue tells the story.

Titebond® III is THE ultimate choice for bonding wood to wood. Period.

For more information and a detailed comparison, please visit www.titebond.com/TBIIIvsPolyurethane

Made in the USA

www.journal-plaza.net & www.freedowns.net

Add Storage to Stands

Fill in the blanks on your splayed-leg tool stand with a pair of space-efficient cabinets.

Open-leg stands save money, go together fast, and provide a sturdy base. But in space-starved shops, those flared legs also eat up precious square footage. Don't waste that space; maximize it by turning the stand into storage.

We sized cabinets to fit the tool stand shown. (See **Sources** at end of article.) For cabinets that fit your tool stand, see the three-step worksheet on *page 24*.

First, cut a shelf to rest on the stand stretchers between all four legs. Then size cases to fit between the legs above and below the shelf using Step 1 on *page 24*. Allow for the shelf thickness when figuring the height of the upper case sides.

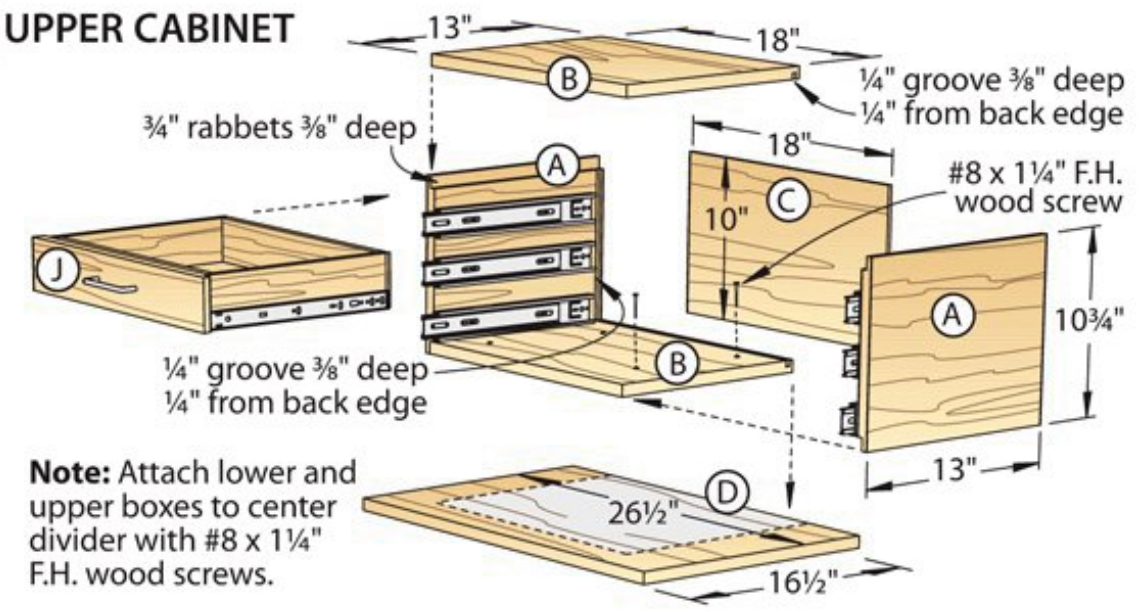
Next, cut the upper cabinet [**Drawing 1**] and lower cabinet [**Drawing 2**] parts to size except for the backs. Cut those about 1" oversize. Dry-assemble the bottom, sides, and top, and measure for the back. Then cut the back to size and assemble the case. Now repeat for the upper cabinet.

To fit doors to a lower case you've customized, measure the opening in your finished cabinet and cut door panels 1/16" shorter than the case-opening height and 1/16" narrower than half the case-opening width.

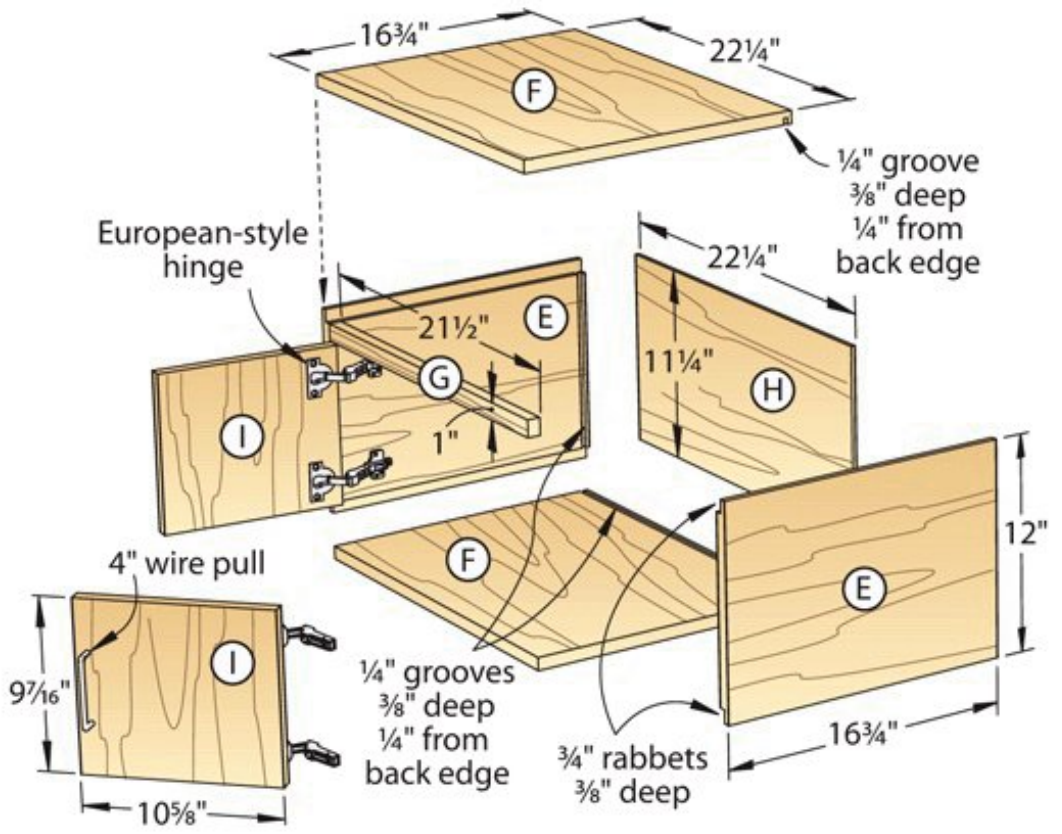
Mount European-style hinges by first drilling 35mm (1 3/8") holes 1/2" deep 2" from the top and bottom. Space the holes in from the door edge according to the manufacturer's instructions. Drill and screw two hinges to each door. Center a door in the opening. Then drill and screw the hinges to the case sides. Repeat for the other door. Finally, use the hinge adjustment screws to fine-tune the door position.

continued on page 24

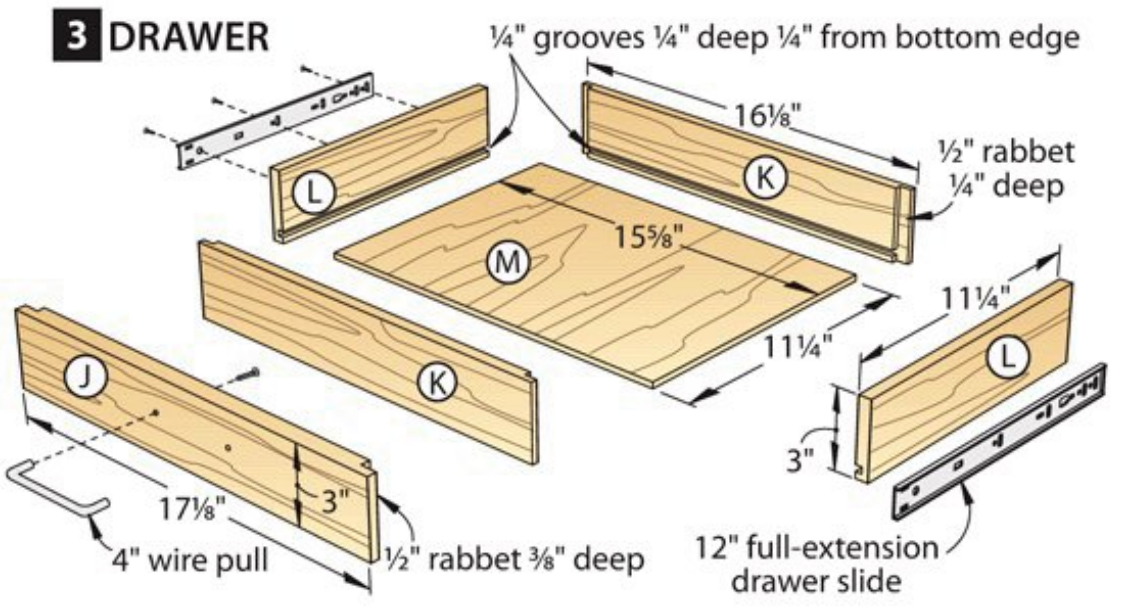
1 UPPER CABINET



2 LOWER CABINET



3 DRAWER



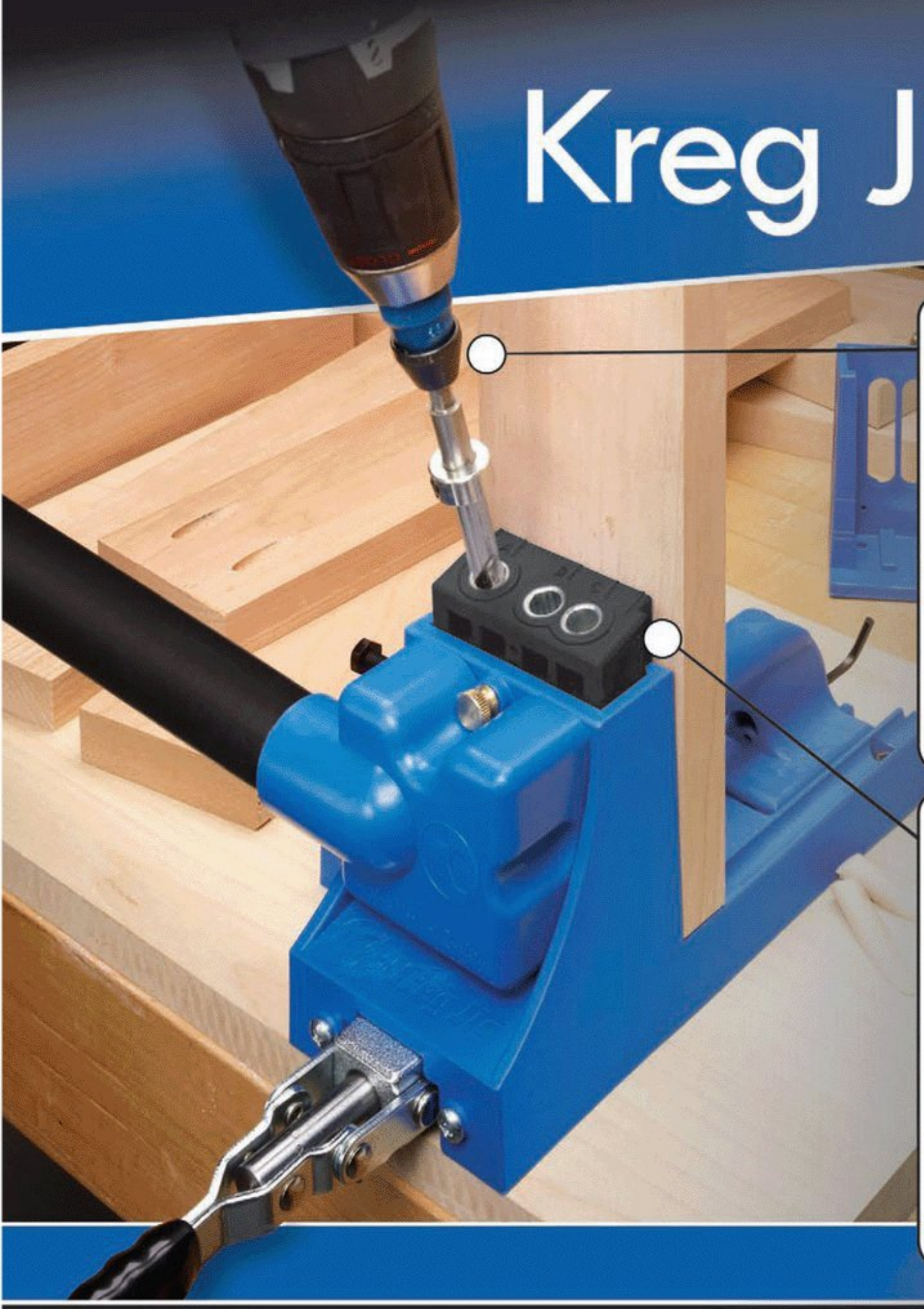
www.journal-plaza.net & www.freedowns.net

Kreg Jig®

Congratulations WOOD Magazine

1984 • WOOD MAGAZINE • 2009

25TH ANNIVERSARY



Quick-Change Kit

NEW

Switch from drilling Pocket-Holes to driving Pocket-Screws in just seconds! Complete quick change set includes everything you need: quick change chuck, hex shank #2 square driver, hex shank Pocket-Hole bit, depth collar, and allen wrench.

$29.99

QUIK-KIT

Micro Pocket™ Drill Guide

NEW

With a 25% smaller hole diameter, the Micro Pocket™ Drill Guide lets you create a more compact, low-profile Pocket-Hole. Works perfectly in standard joinery applications, but also tackles smaller projects, thinner stock, and tighter repair jobs where standard Pocket-Holes simply can't go. Perfect for 1/2" material.

Compatible with K3 / K4 Models

$49.99

KJMICRODGB

The Innovation Continues...

Beaded Face-Frames are a great way to add detail and richness to your cabinetry work. Problem is... they're difficult to build and take a lot of time and effort! Until now. Thanks to our all new Precision Beaded Face-Frame System, anyone can build beautiful face-frames quickly, easily, and more affordably than ever before!

Visit **www.kregtool.com/beaded** today to watch the video and learn more!

Kreg®

www.kregtool.com **800.447.8638**

www.journal-plaza.net & www.freedowns.net

Build custom drawers

For the upper-case drawers, size the drawer box depth to suit your needs and case opening. The assembled drawer box should be 1" narrower than the case opening width to allow for drawer slides, and no deeper than the inside case depth minus ¾" to allow for the drawer front.

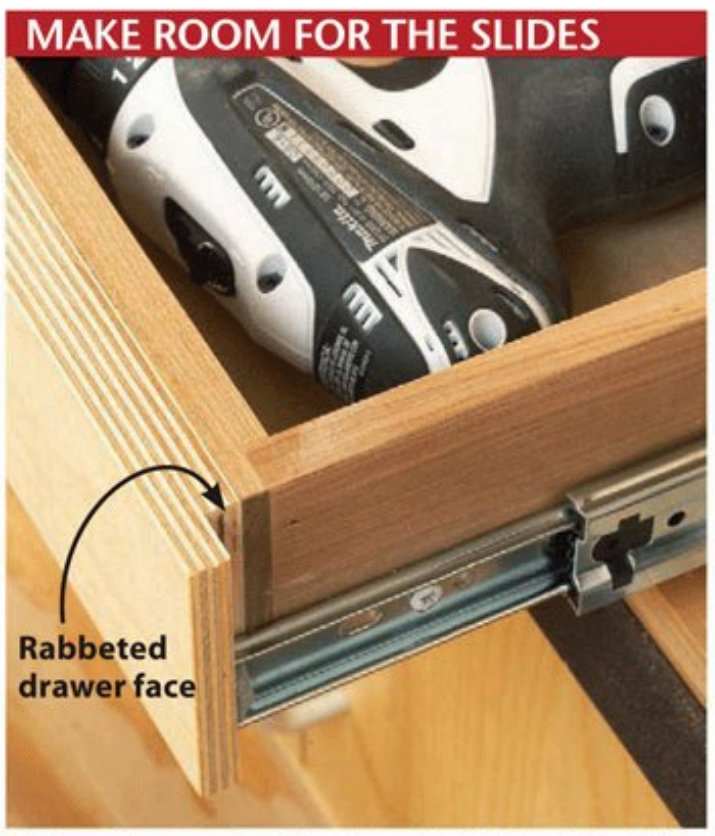
Next, cut the drawer parts to size and rabbet the fronts and backs as shown. For each drawer, glue and clamp together the front and back to the sides with the bottom in the grooves [**Drawing 3**]. Use the longest slides that fit your drawer sides, even if that requires modifying the drawer front faces, as shown *below*. Mark drawer slide centerlines to space the drawers evenly within the case, allowing a ⅛" reveal at the top and bottom and ⅛" between drawers.

Attach the drawer-mounted portions of the slides centered on the drawer sides. Center the case-mounted slide parts on the case centerlines, screw them in place, and test fit the drawer in the case. Attach the drawer faces to the fronts with double-faced tape and install the drawer pulls.

To install the cabinets on your stand, glue or screw the lower cabinet to the center shelf. Loosen the bolts holding the legs to the stretchers enough to slide the shelf and lower cabinet in place, and reassemble the stand. Then screw the shelf to the stand stretchers.

Now slide in the upper cabinet centered on the shelf and screw it in position. With the doors and drawers in place, your stand has the storage to earn its floor space in your shop.

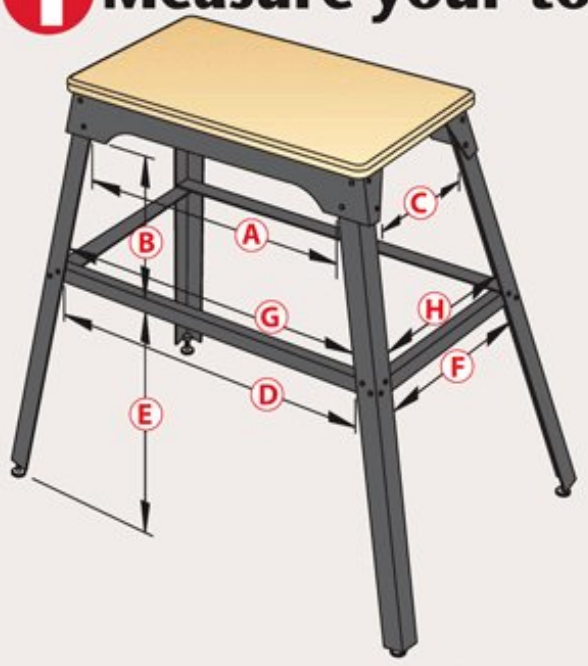
MAKE ROOM FOR THE SLIDES



Sizing drawers to the stand left the sides ½" too short to accept the 12" slides. Rabbeting the drawer-face ends solved the problem.

Plan Custom Storage in 3 Easy Steps

1 Measure your tool stand



	Our Stand	Your Stand	+/- Difference
A	19¼"		
B	11¾"		
C	9¼"		
D	23¾"		
E	13¾"		
F	14"		
G	26½"		
H	16¾"		

We sized our storage cases to fit a stand with the openings shown *above left*. To adapt cases to your stand, measure it at the narrowest points, (A) and (C), for example. Measure between the outside edges of the stretchers (G) and (H) for the shelf. Then write the differences between our dimensions and yours (Step 2) along with a plus or minus sign in the right column of the table *above*. Transfer those numbers to the Materials List in the third step.

2 Do the math (but just a little)

Step A
If your stand measures 13" for dimension Ⓑ, calculate the difference from our stand (13" – 11¾" = 1¼").

Step B
If your stand measures 8" for dimension Ⓒ, calculate the difference (9¼" – 8" = 1¾").

Part	SAMPLE STAND T	W	L	DIFFERENCE FOR YOUR STAND W±	L ±	PART SIZE FOR YOUR STAND W (new)	L (new)	Matl.	Qty.
Upper cabinet									
A sides	¾"	~~10¾"~~	~~13"~~	Ⓑ +1¼"	Ⓒ −1¾"	12"	11¼"	BB	2

Step C
Cross out the original dimension.

Step D
Add or subtract the difference between part sizes and write in the new part dimensions.

3 Size parts for *your* stand

Materials List

Part	SAMPLE STAND T	W	L	DIFFERENCE FOR YOUR STAND W±	L ±	PART SIZE FOR YOUR STAND W (new)	L (new)	Matl.	Qty.
Upper cabinet									
A sides	¾"	10¾"	13"	Ⓑ	Ⓒ			BB	2
B top/bottom	¾"	13"	18"	Ⓒ	Ⓐ			BB	2
C* back	¼"	10"	18"	**	**			BB	1
Lower cabinet									
D shelf	¾"	26½"	16½"	Ⓖ	Ⓗ			BB	1
E sides	¾"	12"	16¾"	Ⓔ	Ⓕ			BB	2
F top/bottom	¾"	16¾"	22¼"	Ⓕ	Ⓓ			BB	2
G front rail	¾"	1"	21½"		Ⓓ			BB	1
H* back	¼"	11¼"	22¼"	**	**			BB	1
I doors	¾"	10⅝"	9⅞16"	**	**			BB	2
Drawers									
J faces	¾"	3"	17⅛"	**	**			BB	3
K fronts/backs	½"	3"	16⅛"	**	**			BB	6
L sides	½"	3"	11¼"	**	**			BB	6
M bottoms	¼"	15⅝"	11¼"	**	**			BB	3

*Parts initially cut oversize. See the instructions. ** Cut to fit the partially finished case. See the instructions.

Materials key: BB–Baltic birch plywood.
Supplies: 12" full-extension slides (3 pairs), 107° offset European-style hinges (2 pairs); 4" wire pulls (5).
Blades and bit: ¼" and ¾" dado sets, 35mm or 1⅜" Forstner bit.

Source

Tool stand: Shop Fox no. G7313 with a 13×23" top, $45, Grizzly Industrial, 800-523-4777 or grizzly.com.

www.journal-plaza.net & www.freedowns.net

Free "Online Videos" show you how to join it, rout it, and clamp it, at...

MLCSwoodworking.com

"Spin Control"

Our Router Speed Control reduces speed without reducing torque! Work at the best speed for your bit and wood. Adjust from 0 RPM to full speed.

#9410 • 20 AMP.....$34.95

"Hot New Joints"

The Fast Joint System creates unique joints quickly and easily. Includes everything you need to make exquiste joinery: The jig, joint templates, clamps, bushings and router bits. Two Sets available.

#9411 • 4 Template Set.....$169.95
#9422 • 11 Template Set....$269.95

ONLINE VIDEO

"45 Different Cuts"

Our 45 piece, carbide tipped Router Bit Set includes straight, round over, chamfer, cove... 20 profiles in all! FREE lube!

1/4" shank • #6074.....$119.95
1/2" shank • #8374.....$119.95

ONLINE VIDEO

"Band Together"

The Merle Band Clamp features dual-pivoting jaws that align to any angle! Features 23' steel banding and four corners. The Shopmaster Set includes 4 clamps and 8 extra corners.

#9012 • Merle Clamp $27.95
#9007 • ShopMaster Set $114.95

ONLINE VIDEO

"Routing Heavyweight"

120 lb. Heavyweight Router Table and Fence features a NEW gas-filled lifting spring for easy tilt-up access, big cast-iron top, clamping system, split fence with dust port, sturdy stand and miter gauge.

#9460 • ON SALE! Save $50.....$349.95

1-800-533-9298
PROFESSIONAL ROUTER BITS & WOODWORKING PRODUCTS

MLCS

FREE SHIPPING!
IN CONTIGUOUS USA • P.O. BOX 165 DI, HV, PA, 19006 *2010

www.journal-plaza.net & www.freedowns.net

3 Ways to Patch a Scratch

Try these techniques to fix everything from a small scratch to an ugly wood wound.

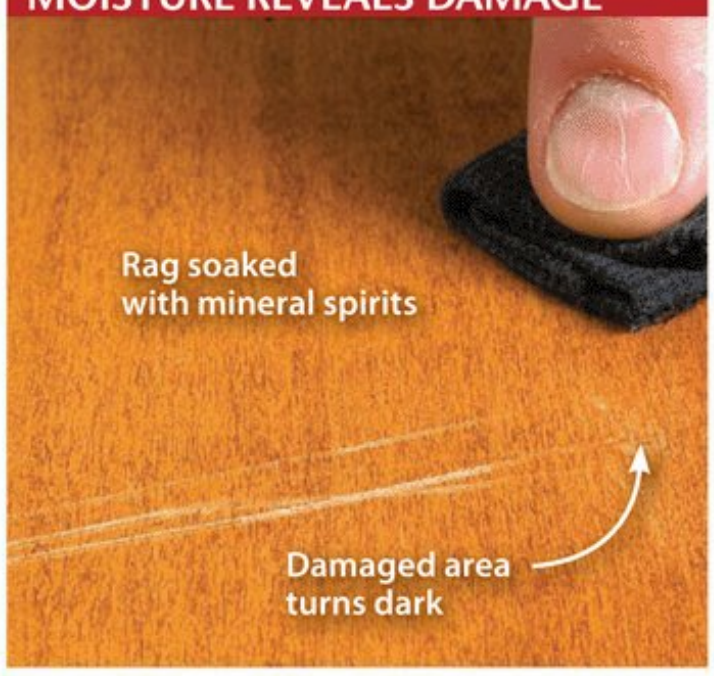
Begin your repair by assessing whether only the film layer is damaged, or both the film and stain, exposing the wood. To test, wipe the damaged area with mineral spirits, as shown *below*, or just a dab of spit. Then choose a repair based on the following:

- No change in color. Good news, the film finish wasn't penetrated down to the wood fibers. Go to **Fix #1**.
- The color changes to match the undamaged area. More good news. Scratches penetrated the film finish, but the wood underneath either wasn't stained or no wood fibers broke. Go to **Fix #2**.
- The damaged area turns darker than the surrounding finish. This deep scratch broke wood fibers. Go to **Fix #3** after reading the rest of this section.

Before starting the second or third fix, determine which type of film finish was used. Perhaps you recall this for projects you built. If not, check whether it's a lacquer finish by dabbing a hidden spot with lacquer thinner. If the finish softens, it's lacquer. If denatured alcohol softens the finish, it's shellac. If there's no change and the piece is fairly new, you likely have a water-based or polyurethane finish.

If you don't know the stain, apply comparable colors to scraps of the same wood species until they match. Before starting all repairs, liberally apply mineral spirits with clean cloths to remove any built-up wax or spray polish.

MOISTURE REVEALS DAMAGE

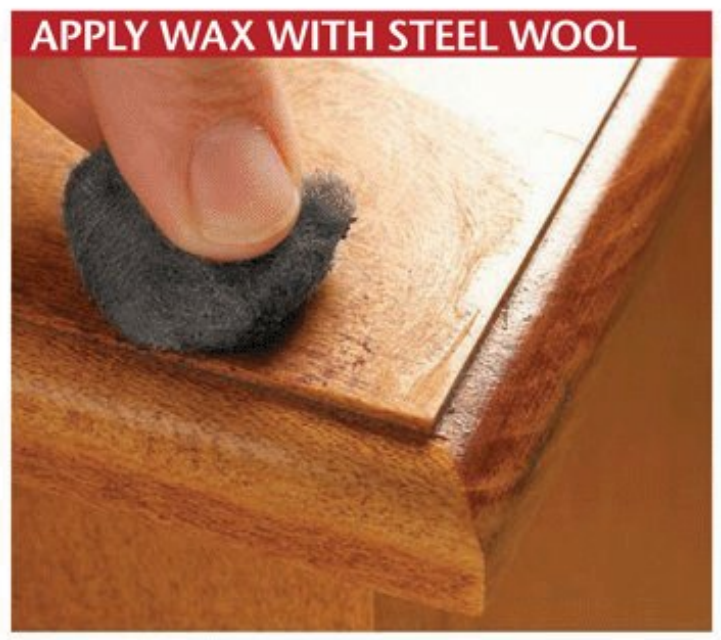


Fix #1: Paste wax for scuffs and shallow scratches

Cover up minor marring or scratches on a film finish using paste wax tinted about the same color as your project. (See **Sources**.) For a light scuff, use a soft cloth to apply the wax. For deeper scuffing, gently apply the wax with 0000 steel wool, as shown at *right*. Allow the wax to harden, and buff it with a soft cloth to the even sheen shown *above, right*. If this produces a sheen that's different from the surrounding area (see "What is sheen?" on the *page 28*), wax the entire surface with a soft cloth.

This method has one drawback: It doesn't repair the damaged area so much as cover it up. Should you later decide to repair the surface by dabbing on finish as in **Fix #2** or applying another coat of finish, you'll first need to wipe away all traces of the wax with generous amounts of mineral spirits and soft, clean cloths.

APPLY WAX WITH STEEL WOOL



continued on page 28

www.journal-plaza.net & www.freedowns.net

99% DUST FREE

**SAWDUST IS MORE THAN A NUISANCE.
IT'S A HAZARD TO YOUR HEALTH.**

Our new Professional Cabinet Saw reduces dust with an innovative system that captures saw dust from above as well as below the table. Now, 99% of these eye, nose and lung irritants are out of your air. It's all part of the advanced, precision engineering that has made SawStop the safest and best-built saw on the market.

SawStop

GET 2 FREE TITANIUM SERIES™ SAW BLADES when you purchase a Professional Cabinet Saw by April 30, 2010. While supplies last.
Visit sawstop.com/PCSpromo

www.journal-plaza.net & www.freedowns.net

Fix #2: Fill in a film finish

Some film-finish dings are too deep for paste wax to cover, but they still don't break the wood's surface, as shown at *near right*. Using a fine-tip applicator (see **Sources**), dab a small amount of matching finish only on the damaged area, as shown at *far right*. Lacquer and shellac patch easily with this method because the freshly applied finish partially dissolves and bonds with the topcoat. Continue dabbing on layers of finish until the patched area becomes level with the surrounding finish.

Use a similar method to touch up dinged polyurethane and water-based finishes, which don't redissolve earlier coats and level themselves. Dab on additional finish and allow it to dry. If there's still a slight depression after the finish dries, gently wipe the patch with 0000 steel wool and apply a second coat. If the patch stands proud of the surface, lightly sand it flush with 400- and 600-grit abrasives. Then restore the sheen of the patched area to that of the surrounding surface by sanding with progressively higher grits and, if necessary, rubbing compounds. A coat of paste wax also can help blend the patch with the rest of the surface.

DINGS LEAVE DIPS IN THE FINISH

LEVEL OFF THE DIP WITH FINISH

What is sheen?

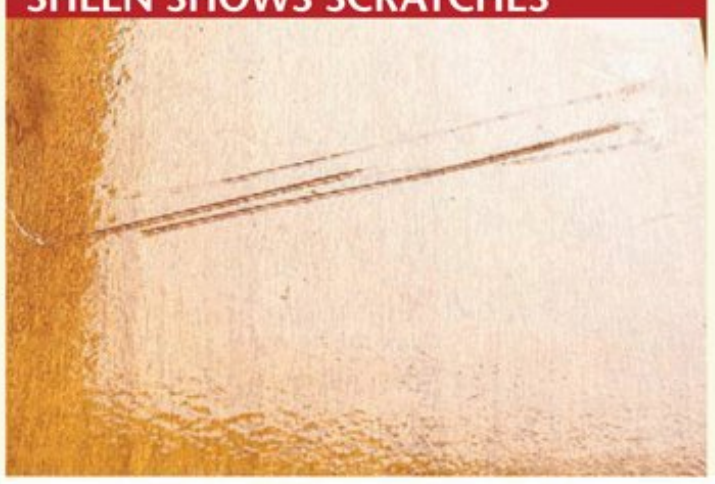
Sheen refers to how much light reflects off a surface. To hide your repairs, you'll need to match the sheen of patched areas to the surrounding finish as carefully as you match stain color to the rest of the surface.

A glossy finish, like the one *below*, bounces more light back to your eyes than a flat finish, which disperses the light. You can control sheen by choosing a flat, satin, semigloss, or gloss finish, each containing different amounts of flatting agent.

That's not the only method, though. You also adjust surface sheen by how smoothly you rub out a film finish with abrasives, and that's what complicates repairs. During the repair, if you rub the damaged area with sandpaper or steel wool and alter the surface sheen, that calls as much attention to itself as an off-color patch.

Avoid inconsistent sheen by using the same abrasive on the patched area as you used to finish the surface when the project was built. Paste wax can offset minor sheen differences, but extensive repairs may require refinishing the entire surface around the damaged area.

SHEEN SHOWS SCRATCHES



Fix #3: Rebuild the finish from bare wood

If the mineral spirits wipe test turned the scratch into a dark streak, the wood fibers have been severed and the severed ends are soaking up the mineral spirits. Deep damage requires extensive repairs.

If there's only one scratch and fibers don't protrude from the surface, first seal the damaged area by dabbing on a 50-50 mix of film finish and the appropriate solvent. Then restore color to the scratch by dabbing on the original or a matching stain using a fine-tip applicator until you match the color. Allow the stain to dry thoroughly; then seal it by dabbing on topcoat as in **Fix #2**.

For multiple moderate scratches, as shown *below left*, consider sanding the damage down to bare wood using 120-grit abrasive. Sanding with a finer grit may produce a lighter surface when restained. Avoid sanding too much over the damaged area and creating a visible depression in the wood. For extensive damage, sand the entire damaged

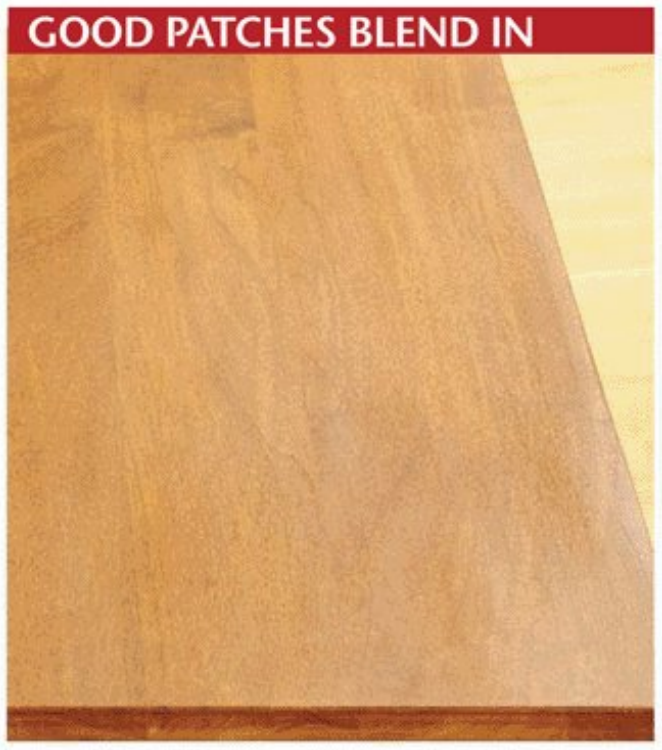
AFTER ALL THAT WORK...OUCH

COLOR MATCH USING STAIN

www.journal-plaza.net & www.freedowns.net

surface to bare wood and refinish it to match.

For smaller repairs, though, begin restoring the color by wiping the bare wood with stain. Carefully wipe the stain to the edge of the sanded area. Avoid staining the feathered edge where the film finish meets bare wood, or you'll leave a darkened halo around the patch.



If the stain wipes on too light and the pores are not being filled to match the surrounding wood, scrape a small amount of pigment from the bottom of the stain can. Pigment colors may vary from the dye in the stain (dye color doesn't settle as pigment particles do), so add pigment carefully to a cloth moistened with stain. Then wipe this mixture over the previously stained area to darken it.

Using a back-and-forth motion, add and then partially wipe off enough coats of stain that the color—while still moist—matches the undamaged surface. If you apply too much stain, wipe it off immediately with mineral spirits and allow the surface to dry. Build color gradually rather than deposit too much at one time.

Allow the stain to dry completely before spraying or brushing on a topcoat to blend the sheen of the patch with the surrounding surface, as shown *above*. If necessary, recoat the entire surface for an even sheen.

Sources

Tinted wax: Briwax in nine shades, $16 for 16 oz, Woodcraft, 800-225-1153 or woodcraft.com.

Fine-tip applicators: Microbrushes ranging from superfine to small brush sizes, $2.40 for 10, Lee Valley Tools, 800-871-8158 or leevalley.com.

WOODCRAFT®

For A Free Catalog Or To Find Your Local Woodcraft Store, Visit woodcraft.com Or Call 800-225-1153.

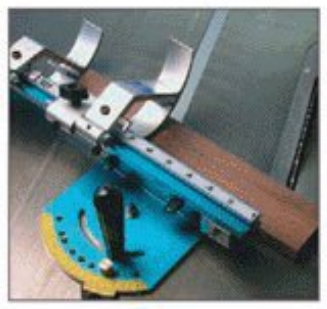
Kreg Miter Gauge System

Consistently cut perfect miters without tuning. Factory calibrated accuracy starts with a gauge head that is machined on a computerized milling machine for absolute precision.

Kreg

145765

- An Easy-To-Read Vernier Scale Enables Precise Angle Adjustments Up To 1/10 Of A Degree
- Five Patented Bar Adjusters Take Up The Play In The Miter Slot For A Perfect Fit
- Your Workpiece Is Supported By A Heavy-Duty 24" Aluminum Fence With An Adjustable Flip-Stop
- Includes A Self-Adhesive Measuring Tape



10WI05R

QUALITY WOODWORKING TOOLS • SUPPLIES • ADVICE®

TURNS ANY WET-DRY VAC INTO A SUPERHERO.

CleanStream® Pro Filters transform mild-mannered work vacs into super-powerful dust-fighters. With true HEPA filtration of 99.97% of even the finest particles, you'll get super cleanups without dust clouds. Sawdust, drywall dust, water – none of them stand a chance against the dynamic duo – your wet-dry vac and a Cleanstream Filter.

Available at The Home Depot, Sears, Menards, Lowe's

cleanstream.com

CleanStream Wet/Dry Vac Filter

Cleanstream and GORE are registered trademarks of W.L. Gore & Associates, Inc. © 2009 W.L. Gore & Associates, Inc.

Dust has met its match.

www.journal-plaza.net & www.freedowns.net

Develop Your **Shop Skills**

Razor-fine layout lines

Use "cutting-edge" technology for accuracy a pencil could never deliver.

Does it make sense to measure to 1/64", and then mark a line with a pencil point that's twice that width? Even a fine mechanical pencil proves no match for the precision of a marking knife. Here's what you need to know before buying one.

■ We show a dedicated marking knife in these photos, but you can, in most cases, get good results using a utility or craft knife. However, beware that those knives' thin blades might flex and stray from your intended layout.

■ You can buy individual left- and right-handed knives, as shown *top right*, or a knife with a dual-bevel blade (*inset*). All have a flat face on the blade opposite the bevel, letting you place it tightly against a straightedge or mating workpiece for a precise mark. The left- and right-handed knives tend to have larger handles, making them easier to grasp if you have large hands.

Learn the basics first

■ Sharpen your knives on a fine-grit stone or sandpaper by simply pressing the bevel against the surface and dragging back and forth a few times. Remove the burr from the flat side by making a couple of passes on the abrasive. It won't take long to put a keen edge on the knife.

■ You don't need to score deeply, just enough that a chisel or handsaw will seat in the kerf. With coarse-grained woods, such as oak or ash, the marking knife might follow the grain rather than your straightedge. To avoid this, make the first scoring pass lightly, and follow with successively greater pressure, deepening the kerf.

Here are some examples of when a keen marking knife will leave a pencil looking dull.

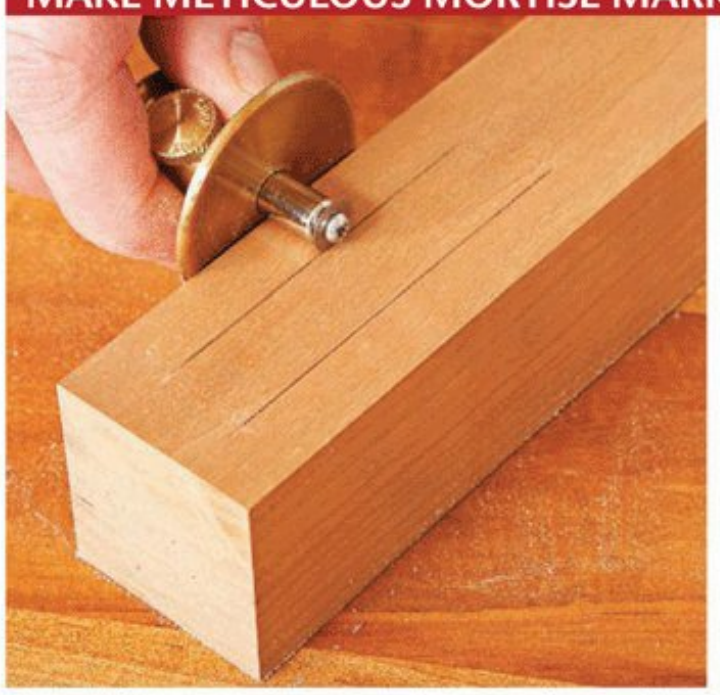
DUAL-BEVEL KNIFE

Locating mortises

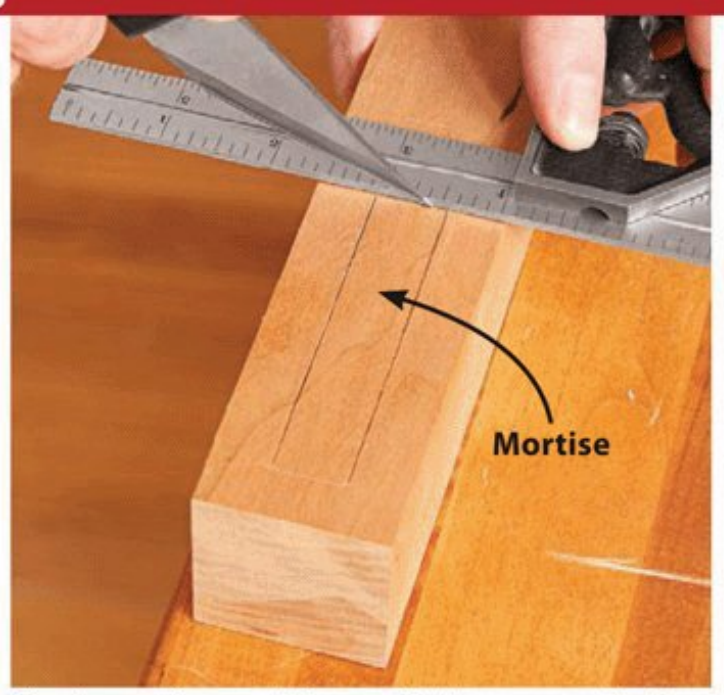
A mortise-and-tenon joint requires a precise fit to be strong and attractive. To lay out a mortise, as shown on the table legs *below*, first mark the mortise sides with a marking gauge. Next, mark the top and bottom of the mortise with a marking knife and a square. Once you've got a mortise located on one table leg, use it to lay out the mortise ends for the other legs. Simply clamp the legs together and grab a square to transfer the lines. You can also use your marking gauge or knife to mark the shoulders for the tenons on the mating workpieces.

continued on page 32

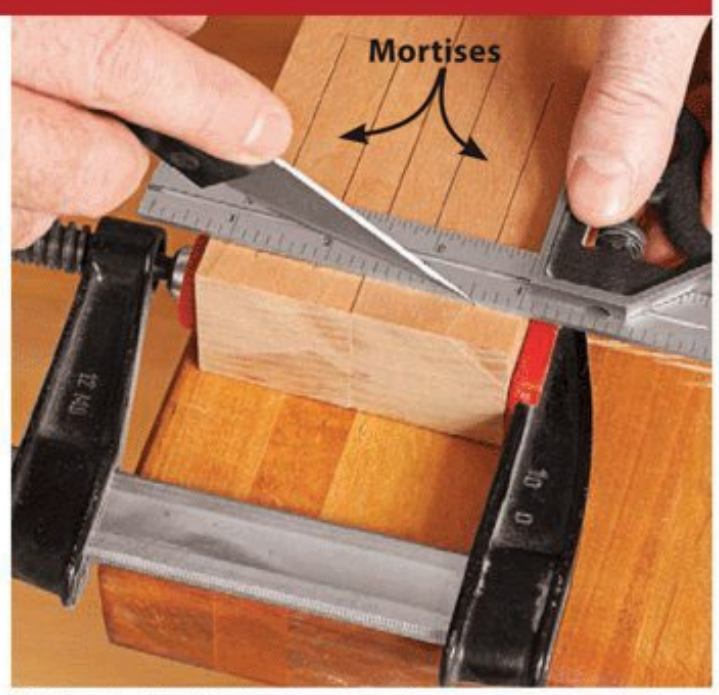
MAKE METICULOUS MORTISE MARKS



A marking gauge ensures the mortise-wall layout lines run perfectly parallel to the workpiece sides.



Mark mortise-end lines a little past each of the sidewall lines. The wayward marks will be concealed by the tenon shoulders.



With the knife in the mortise-end line of the first leg, slide the square up against it, and then mark the other leg for an exact match.

www.journal-plaza.net & www.freedowns.net

Call today for your FREE demo video!

Cut Precise Metal Shapes In A Flash

"PlasmaCAM is a well thought-out tool. The software is incredible. I can quickly go from concept to a finished part. I haven't seen anything we can't do with this machine. It has saved us so much time and effort, it's just incredible!"

-Jim, Custom Turbo Engineering

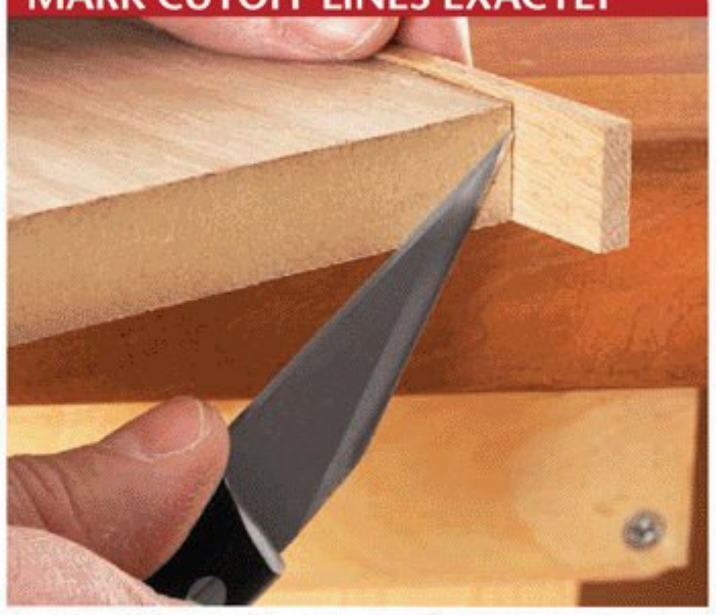
Artistic Parts
Mechanical Parts
Detailed Custom Work
Mass Production

(719) 676-2700 • fax (719) 676-2710 • www.plasmacam.com
PO Box 19818 • Colorado City, CO 81019

PlasmaCAM Inc.

www.journal-plaza.net & www.freedowns.net

MARK CUTOFF LINES EXACTLY

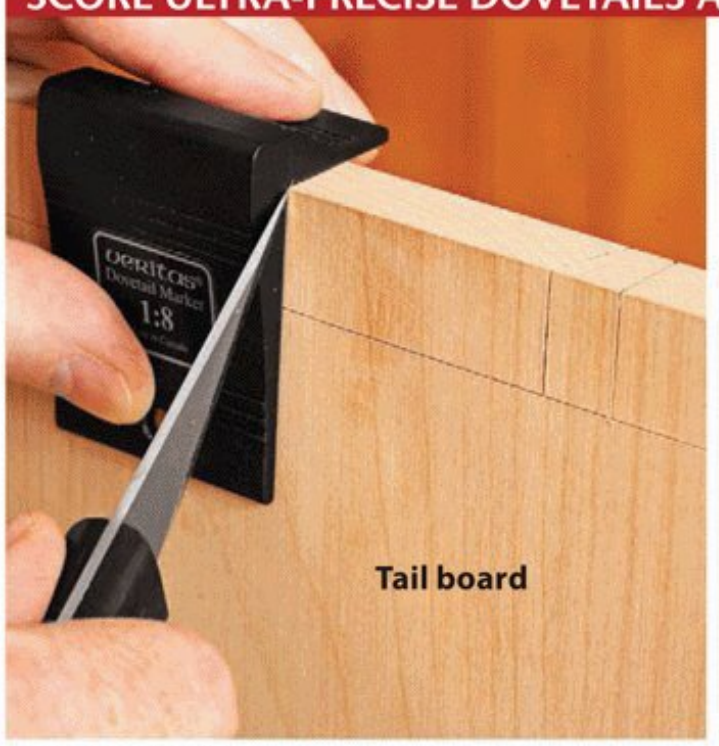


Hold solid-wood edging tight against the panel; then use a marking knife to score it for the exact length needed.

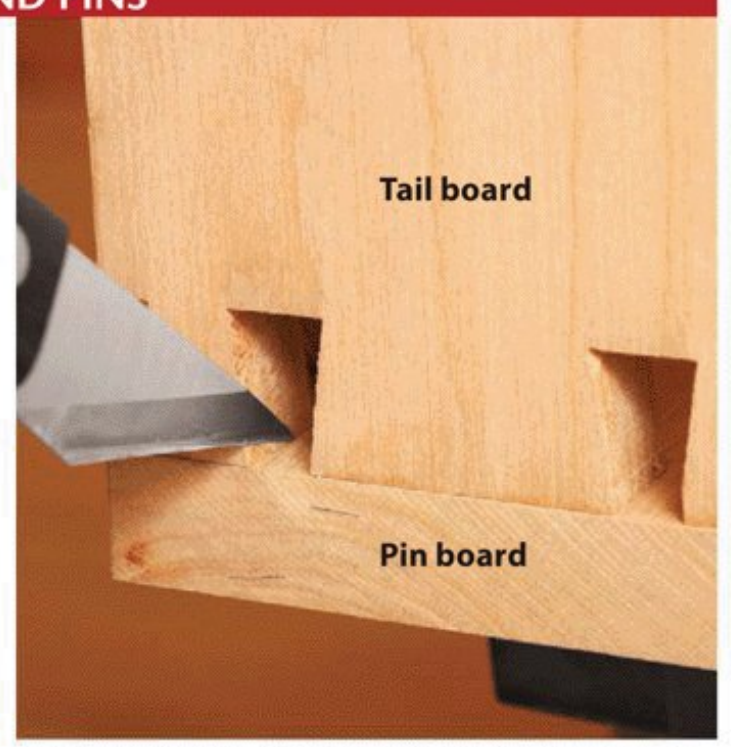
Sizing up project parts

Marking knives help you precisely transfer measurements when marking parts to size. For example, marking a piece of solid-wood edging to match a veneered panel, as shown *above*, gives you an exact fit. You can do this with any project part that must be cut to fit an existing opening or when making story sticks, templates used for marking and transferring measurements.

SCORE ULTRA-PRECISE DOVETAILS AND PINS



After scoring the pin-socket depth with a marking gauge, use a knife to define the tails.



Use your already-cut tail board to now mark the locations for the mating pins.

Marking dovetails

You enjoy two advantages when laying out dovetails with a marking knife, as shown *above*. First, you get the greater precision of the knife's keen edge, resulting in a better fit. And when you begin cutting the pins and tails, your chisel or handsaw slips into the knife-cut kerf for straighter, cleaner cuts.

Sources

Single-bevel marking knives: part #33N07.01 (right-hand bevel); #33N07.02 (left-hand bevel); $31.50 each, Lee Valley, 800-871-8158, leevalley.com.
Dual-bevel marking knife: part #885-2154, $50, Traditional Woodworker, 800-509-0081, traditionalwoodworker.com.
Dovetail markers: part #05N61.04 (6°); #05N61.05 (8°); #05N61.08 (14°); $12.95 each, Lee Valley, 800-871-8158, leevalley.com.

www.journal-plaza.net & www.freedowns.net

Jim Heavey on DVD!

Learn firsthand from WOOD® Magazine's Master Craftsman

Only $19.95 each!
Or all 5 DVDs for $74.95

SAVE $25

Order online now at
woodmagazine.com/JimHeavey
or call **888-636-4478**

Please have your credit card information available.

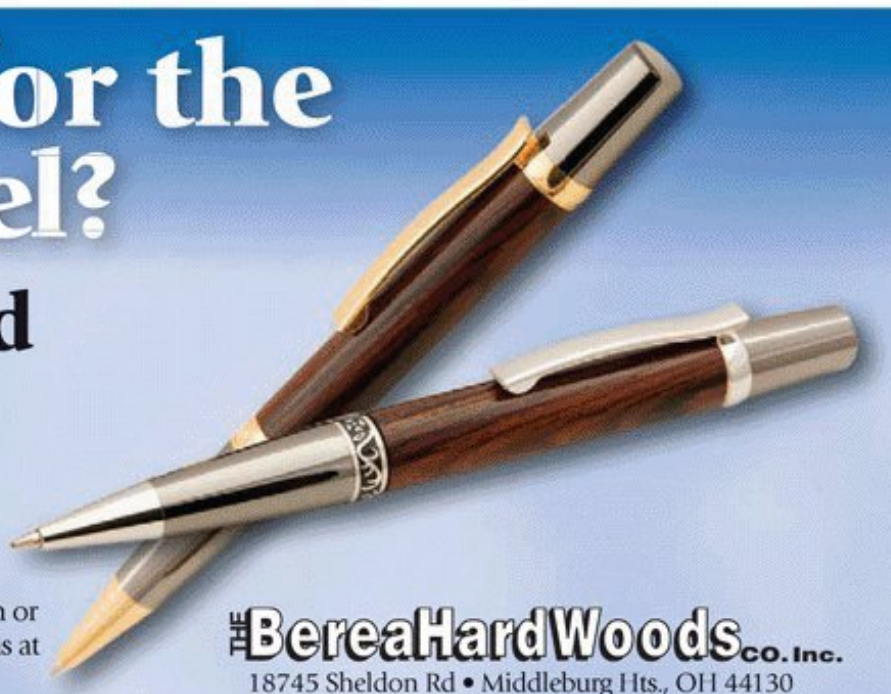
WD0510

Ready for the next level?

Berea Brand Pen Kits!

- High Quality
- Original Designs
- Reasonably Priced

Visit us at www.bereahardwoods.com or call us at 1-877-736-5487 or e-mail us at bereahard@aol.com



THE BereaHardWoods CO. Inc.
18745 Sheldon Rd • Middleburg Hts., OH 44130

CMT® ITK PLUS™

The New Industrial Thin-Kerf Blade

- *Silver Non-Stick PTFE Coating*
- *Precision Balanced to Run Truer*
- *Heavy Duty Laser Cut Plate - Thin and Strong*
- *Finest Industrial Quality Micrograin Carbide*
- *Laser Cut Sound Dampening Channels*
- *Laser Cut Heat Expansion Slots*
- *Tri-Metal Shock Resistant Brazing*
- *Super Thin-Kerf*

VISIT LOWES.COM

AVAILABLE AT LOWE'S
Let's Build Something Together™

© C.M.T. UTENSILI S.P.A. TM: CMT, the CMT logo are trademarks of C.M.T. UTENSILI S.P.A. All rights reserved. Lowe's and the gable design are registered trademarks of LF, LLC.

RADIANT
Floor Company

Green Technology at Your Feet

1.866.WARM-TOES

Our radiant floor heating systems are compatible with any fuel source:

GAS PROPANE SOLAR OIL WOOD ELECTRIC GEOTHERMAL

VISIT OUR WEBSITE
CALL FOR A FREE QUOTE
www.radiantcompany.com
Barton, Vermont

www.journal-plaza.net & www.freedowns.net

Floating Wall Shelves

BASIC-BUILT™
GREAT PROJECTS MADE SIMPLE.

With attractive shelves this easy to make, you'll soon fill rooms with decorative displays.

WHAT YOU'LL NEED

■ **Materials:** ¾" oak plywood, ¾×3" oak, 2¼"-wide oak crown molding, 1⅛" oak plywood cap molding.

Friends who see these shelves will ask you two questions: "How are they supported?" (cleats) and "Can you make one for me?" (no problem). For variety, try the version on *page 37*.

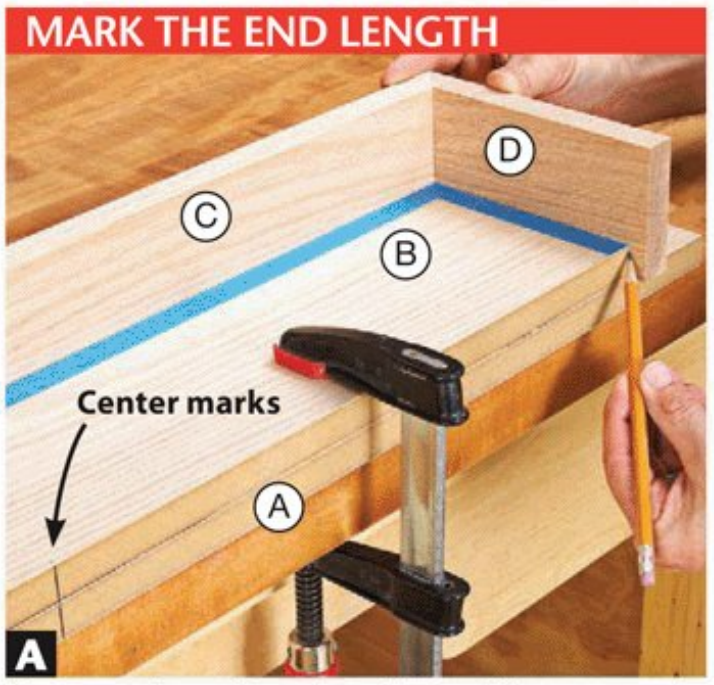
Cut and assemble the shelf

1 Cut the top (A) and bottom (B) to size [**Materials List**, *page 36*] from ¾" plywood. Then, from ¾" oak, cut the face (C) 2" longer than shown, and ends (D) 1" longer than shown. Miter one end of the front and each end piece.

2 Apply painter's tape to the front edge and both ends of the bottom (B) to keep glue from sticking to it later. Mark centers of the untaped edge on the bottom and one edge of the top (A). Align the center marks with the edges flush and clamp both parts to your workbench [**Photo A**].

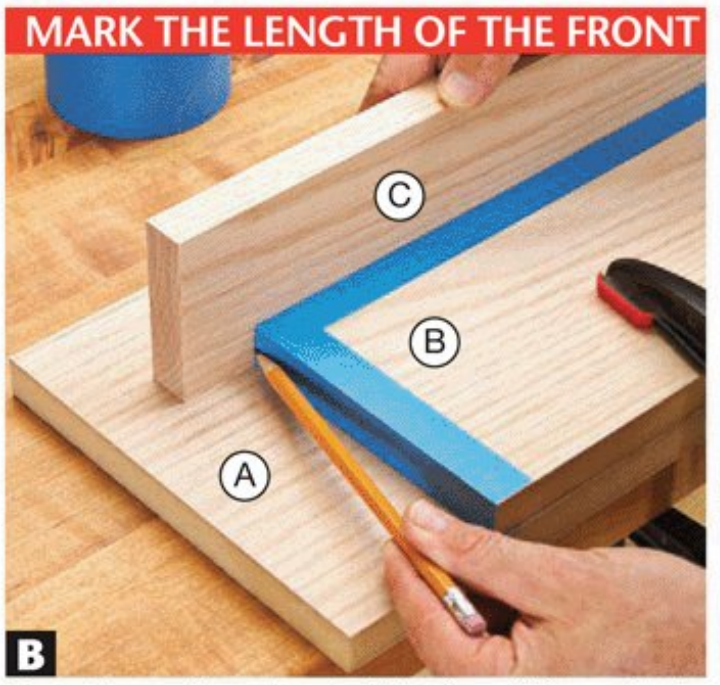
3 Hold the face (C) against the taped edge of the bottom (B) and one end

MARK THE END LENGTH



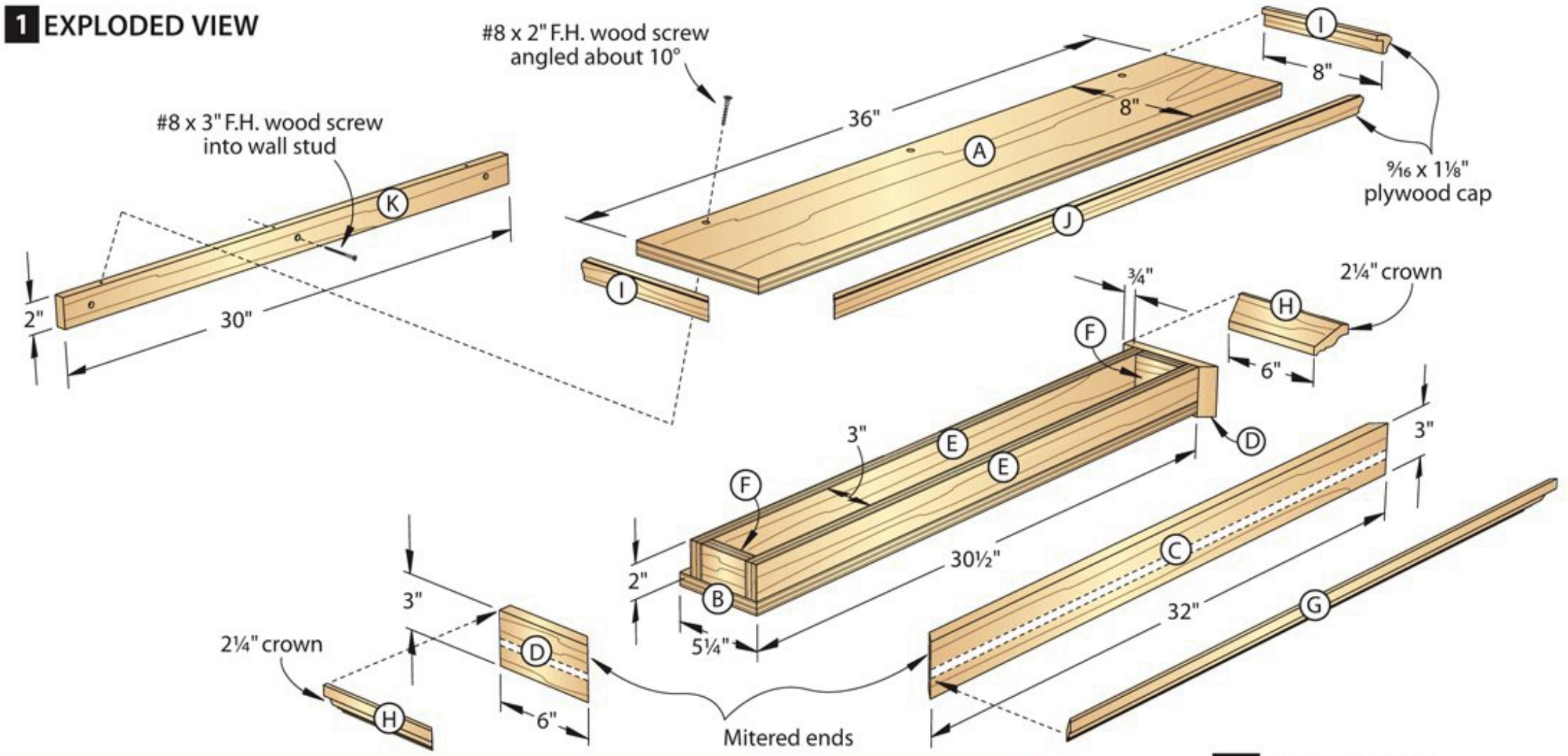
Squeeze the miters together while you mark where to cut the end (D) even with the back edge of the bottom (B).

MARK THE LENGTH OF THE FRONT



Place the mitered end of the face (C) against the opposite corner of the bottom (B) while marking the second miter's location.

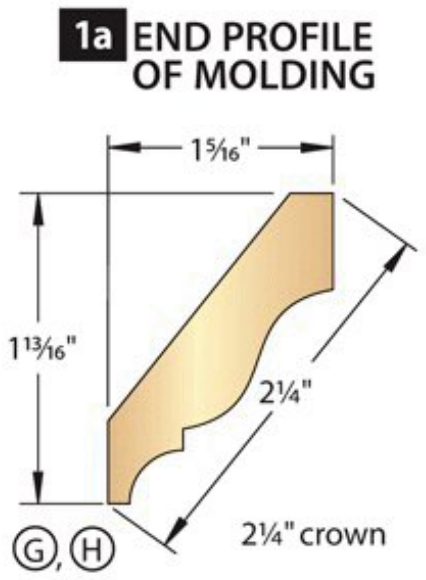
www.journal-plaza.net & www.freedowns.net



SHOP TIP

Give your pencil point knife-edge precision

When the width of your pencil line makes a difference between tight and not-so-tight miters, don't settle for heavy pencil marks. Mount 180-grit sandpaper on a flat surface and quickly sand the point to a chisel shape.



(D) against a taped end of the bottom with their miters together. Mark and cut it flush with the bottom edge [**Photo A**]. (See the **Shop Tip** *above* for how to draw ultrafine marks.)

4 With the face (C) and end (D) miters tight, mark the miter location at the other end of the face [**Photo B**] and miter-cut it to length. Now hold the miter on the oversize end piece against the front miter, mark it at the edge of the bottom (B) and cut it to length.

5 Sand the face (C) and ends (D) to 180 grit. Glue and clamp them to the top (A) [**Drawing 1**], using the bottom (B) as a guide. After the glue dries, pull out the bottom and peel off the tape.

6 Cut long spacers (E) and short spacers (F) to size; then glue and clamp them to the bottom (B) and ends (D). After the glue dries, glue, center, and clamp the top (A) to the edges of the face (C), ends, long spacers, and short spacers to complete the shelf assembly.

Add the crowning touch

1 Compare the dimensions of the crown molding with the dimensions shown [**Drawing 1a**]. Cut the front crown (G) and end crowns (H) about 4" overlong and miter one end of each. (Note the left and right end crowns.) For help mitering moldings, see "Cut safe, simple miters" on *page 36*.

2 With the shelf assembly (A–F) upside down on your bench, tape the mitered ends of the front crown (G) and one end crown (H) [**Photo C**]. Then mark the end crown where it's flush with the end (D). Cut the end crown to length.

3 As you did with the face (C) and end (D), mark and cut the front crown (G) and other end crown (H) to length. Glue and clamp the front crown and end crowns in position.

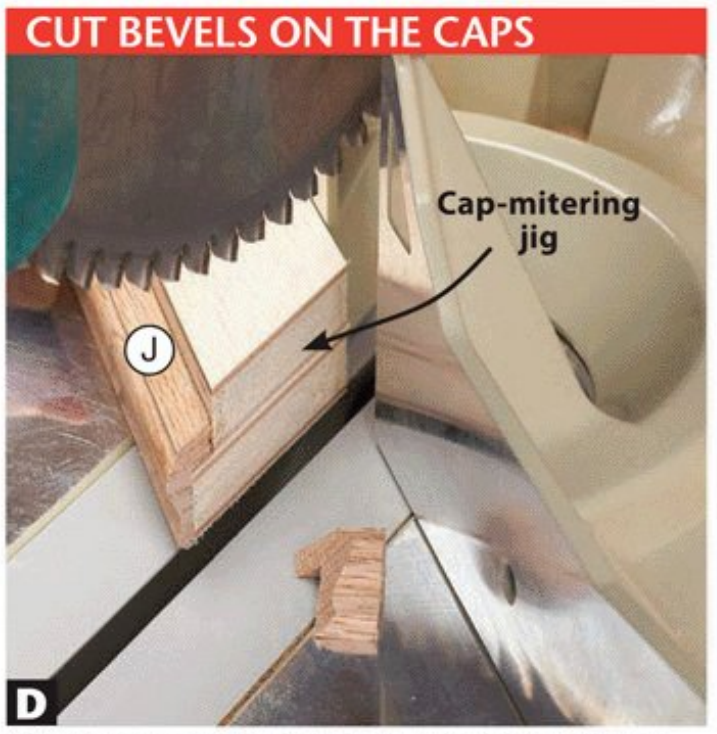
4 Cut the end caps (I) and front cap (J) about 2" longer than shown. Then make a cap-mitering jig to fit your miter-saw. To do this, cut two 16"-long strips from ¾" plywood scraps, one 1½" wide and the other 1¼" wide. Stack and glue the strips with their edges and ends flush, then cut miters on both ends.

5 With the mitering jig on your saw [**Photo D**], miter one end of the left and right end caps (I) and the front cap (J). Butt the miters on one end cap and front cap, then mark the front cap length [**Photo E**]. Cut the front cap to length on the mitering jig [**Photo F**]. Now mark the end caps and cut them to length. Glue and clamp the end caps and front cap in position on the top (A).

ADD THE CROWN MOLDING

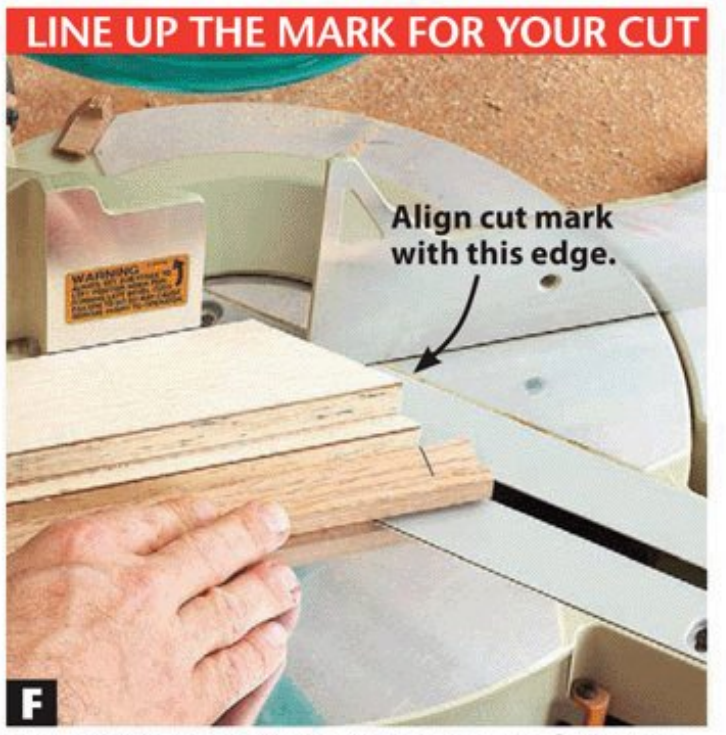
After mitering the front crown (G) to length, butt that against the end-crown (H) miter and mark the end crown length.

www.journal-plaza.net & www.freedowns.net



The two-piece jig holds the molding blank and backs up miter cuts. Alter the jig dimensions as needed to fit your molding.

Hold the mitered opposite end of the front cap (J) flush with a corner of the top (A) and mark the wide portion of the cap.



Line up the cut mark with the end of the cap-mitering jig, and rotate the workpiece onto the jig before making a cut.

Mount the shelf

1 After the glue dries, finish-sand parts to 180 grit. We applied Varathane Dark Walnut stain and two coats of satin wipe-on polyurethane.

2 Cut a hanger cleat (K) to size, and mount it level on a wall using #8×3" screws reaching into studs. (Substitute drywall anchors, if necessary.)

3 Temporarily hold the completed shelf against the wall-mounted hanger cleat (K) and drill three countersunk ⅛" pilot holes through the top (A) and into the wall cleat (K). Angle the drill bit slightly to help the chuck clear the wall. Touch up the stain and finish around the countersinks as needed. Then drive screws to install the shelf on the hanger cleat. Now gather up your display items and show them off along with your new shelf.

Cut safe, simple miters

This method for cutting crown molding works as easy as 1-2-3 with no tricky mitersaw setups.

1 Cut a 3"-wide piece of ½" MDF long enough to span your mitersaw table. Then apply pieces of double-faced tape to the underside of this support strip.

2 With the crown molding angled upside down and its mounting edges against the mitersaw table and fence, attach a support strip to hold the crown molding in position (*below left*).

3 Cut kerfs in the support strip at both 45° angle settings and remove the center section. Lay the crown molding in position with the cut marks about ⅛" from the support-strip miters to allow for the kerf width. Cut parts to size (*below right*). **Note:** *When using a mitersaw this way, start the saw with the blade up, make the cut, then switch off the motor and allow it to stop before lifting the blade. This prevents a spinning blade from tossing small cutoffs.*

When attaching the crown molding stop strip, apply double-faced tape so it adheres to the fixed outside edges of the mitersaw table, not the rotating part.

When the crown molding doesn't extend along one side of the crown molding stop, add a spacer there to keep the spinning blade from moving the stop.

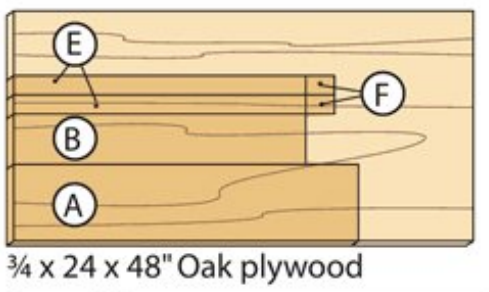
Materials List

Part		FINISHED SIZE T	W	L	Matl.	Qty.
A	top	¾"	8"	36"	OP	1
B	bottom	¾"	5¼"	30½"	OP	1
C*	face	¾"	3"	32"	O	1
D*	ends	¾"	3"	6"	O	2
E	long spacers	¾"	2"	30½"	OP	2
F	short spacers	¾"	2"	3"	OP	2
G*	front crown	7⁄16"	2¼"	34⅝"	OC	1
H*	end crowns	7⁄16"	2¼"	7 5⁄16"	OC	2
I*	end caps	9⁄16"	1⅛"	8 5⁄16"	OPC	2
J*	front cap	9⁄16"	1⅛"	36⅝"	OPC	1
K	hanger cleat	¾"	2"	30"	O	1

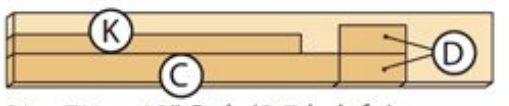
*Parts initially cut oversize. See the instructions.

Materials key: OP–oak plywood, O–oak, OC–oak crown molding, OPC–oak plywood cap
Supplies: #8×2" flathead wood screws (3), #8×3" flathead wood screws (3).

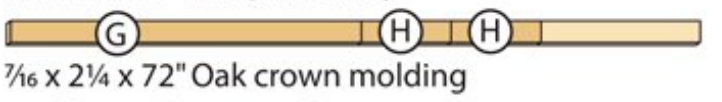
Cutting Diagram



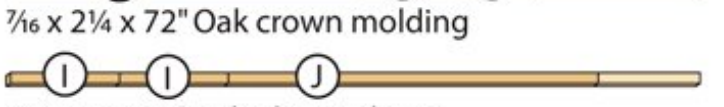
¾ x 24 x 48" Oak plywood



¾ x 7¼ x 48" Oak (2.7 bd. ft.)



7⁄16 x 2¼ x 72" Oak crown molding

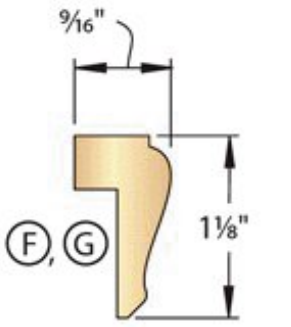


9⁄16 x 1⅛ x 72" Oak plywood cap

www.journal-plaza.net & www.freedowns.net

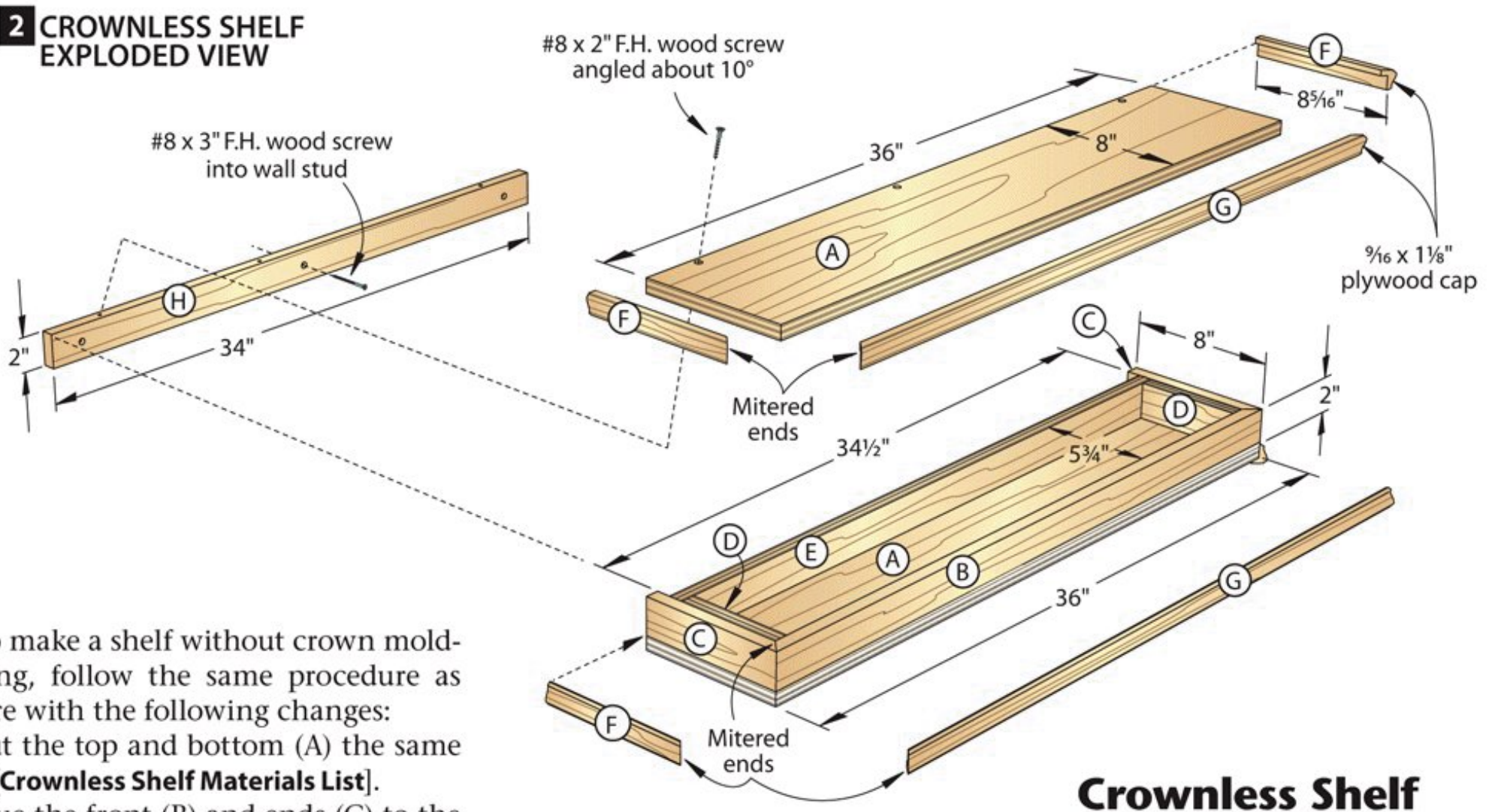
Build an even easier shelf

2a END PROFILE OF MOLDING



9/16 x 1 1/8" plywood cap

2 CROWNLESS SHELF EXPLODED VIEW



To make a shelf without crown molding, follow the same procedure as before with the following changes:

- Cut the top and bottom (A) the same size [**Crownless Shelf Materials List**].
- Glue the front (B) and ends (C) to the bottom (A) [**Photo G**], then add the back spacers (D) and back (E) before gluing the top (A) in place [**Drawing 2**].
- Glue and clamp end and front plywood caps (F, G) to the edges of both the top and bottom (A).

Written by **Bob Wilson** with **Jeff Mertz**
Project design: **Jeff Mertz**
Illustrations: **Roxanne LeMoine**; **Lorna Johnson**

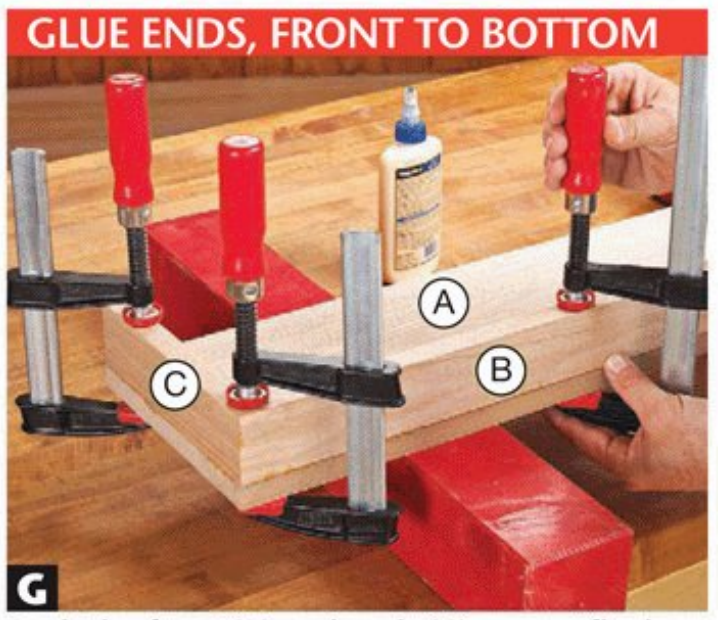
Crownless Shelf Materials List

Part		FINISHED SIZE T	W	L	Matl.	Qty.
A	top/bottom	¾"	8"	36"	OP	2
B*	front	¾"	2"	36"	O	1
C*	ends	¾"	2"	8"	O	2
D	back spacers	¾"	2"	5¾"	OP	2
E	back	¾"	2"	34½"	OP	1
F*	end caps	9/16"	1 1/8"	8 5/16"	OPC	4
G*	front caps	9/16"	1 1/8"	36 5/8"	OPC	2
H	hanger cleat	¾"	2"	34"	O	1

*Parts initially cut oversize. See the instructions.

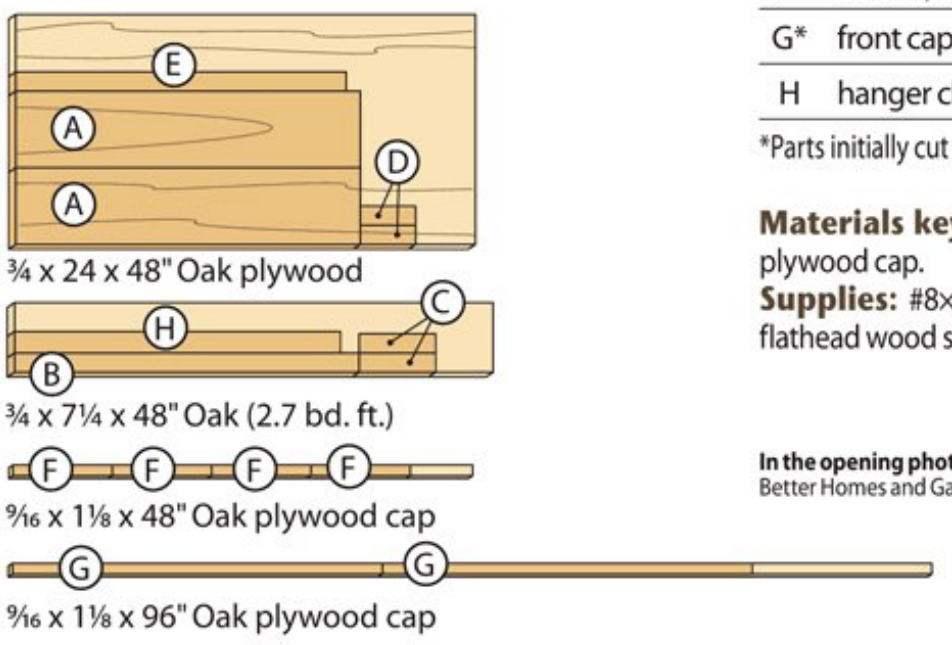
Materials key: O–oak, OP–oak plywood, OPC–oak plywood cap.
Supplies: #8×2" flathead wood screws (3), #8×3" flathead wood screws (3).

In the opening photo: Better Homes and Gardens® Candle Holders and Better Homes and Gardens® Frames sold at Walmart®.



Both the front (B) and ends (C) mount flush with the top/bottom (A). Plywood caps (F, G) later will hide the exposed plywood edges.

Cutting Diagram



www.journal-plaza.net & www.freedowns.net

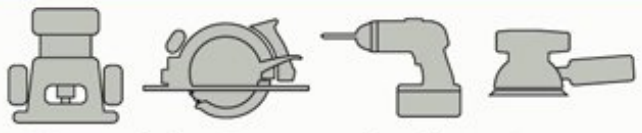
Durable, doable Outdoor Bench

Using only portable power tools, you can turn dimensional lumber into the star of your deck, patio, or garden.

BASIC-BUILT™
GREAT PROJECTS MADE SIMPLE.

Overall dimensions: 70" long × 19⅜" deep × 16" high.

WHAT YOU'LL NEED



- **Materials:** Four cedar 8' 4×4s, one 4' 4×4, two 8' 2×4s, and two 6' fence pickets. (See **Shop Tip**, *page 41*.)
- **Bits:** ⅜" round-over router bit and ¾" spade bit.

Shop for easy-to-find materials on Saturday, and by Sunday you'll be sitting on your own bench that's built to last for years.

Dado with a circular saw

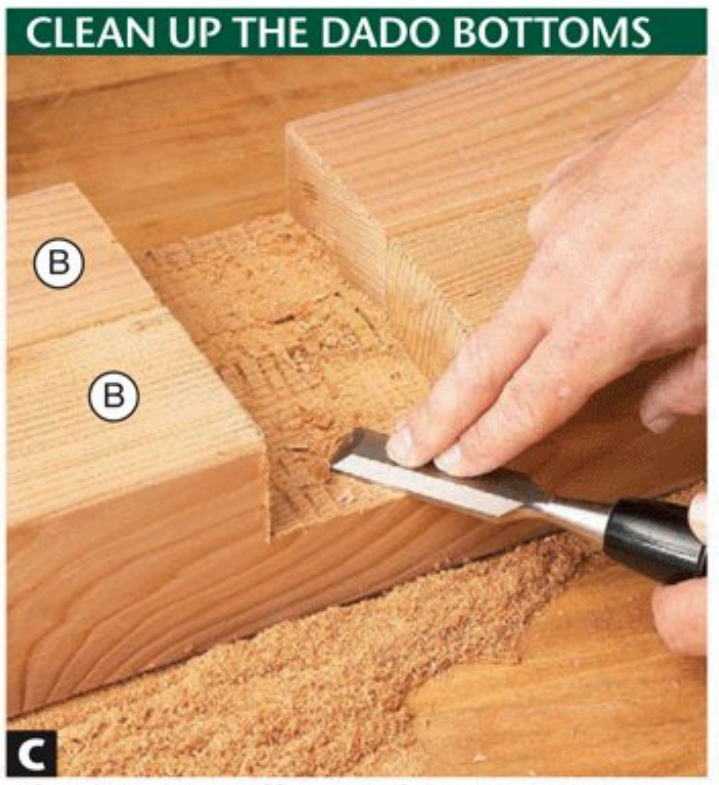
1 Cut the inside seat slats (A), outside seat slats (B), and legs (C) to size [**Materials List**, *page 41*]. ***Quick Tip: Cut yourself some slack.*** You can cut two inside or outside seat slats from one 12'-long 4×4, but a little extra money for two 8' 4×4s gives you more flexibility to trim checked material off the ends and work around knots. Clamp the inside seat slats together with the ends and faces flush to reduce wood movement; then set them aside.

2 Clamp together the outside seat slats (B) with the faces and ends flush. Measure and mark 9" from each end where you'll begin dadoes for the legs [**Drawing 1**]. ***Quick Tip: Put your best face forward.*** Before notching and assembling the slats, take a moment to study the grain and turn the most attractive faces to the top and outside edges of the bench. Set your circular saw to make a 1¾"-deep cut and saw the first dado cuts where marked. Place a leg (C) on the first kerfs and mark the opposite ends of the dadoes on the outside slats [**Photo A**].

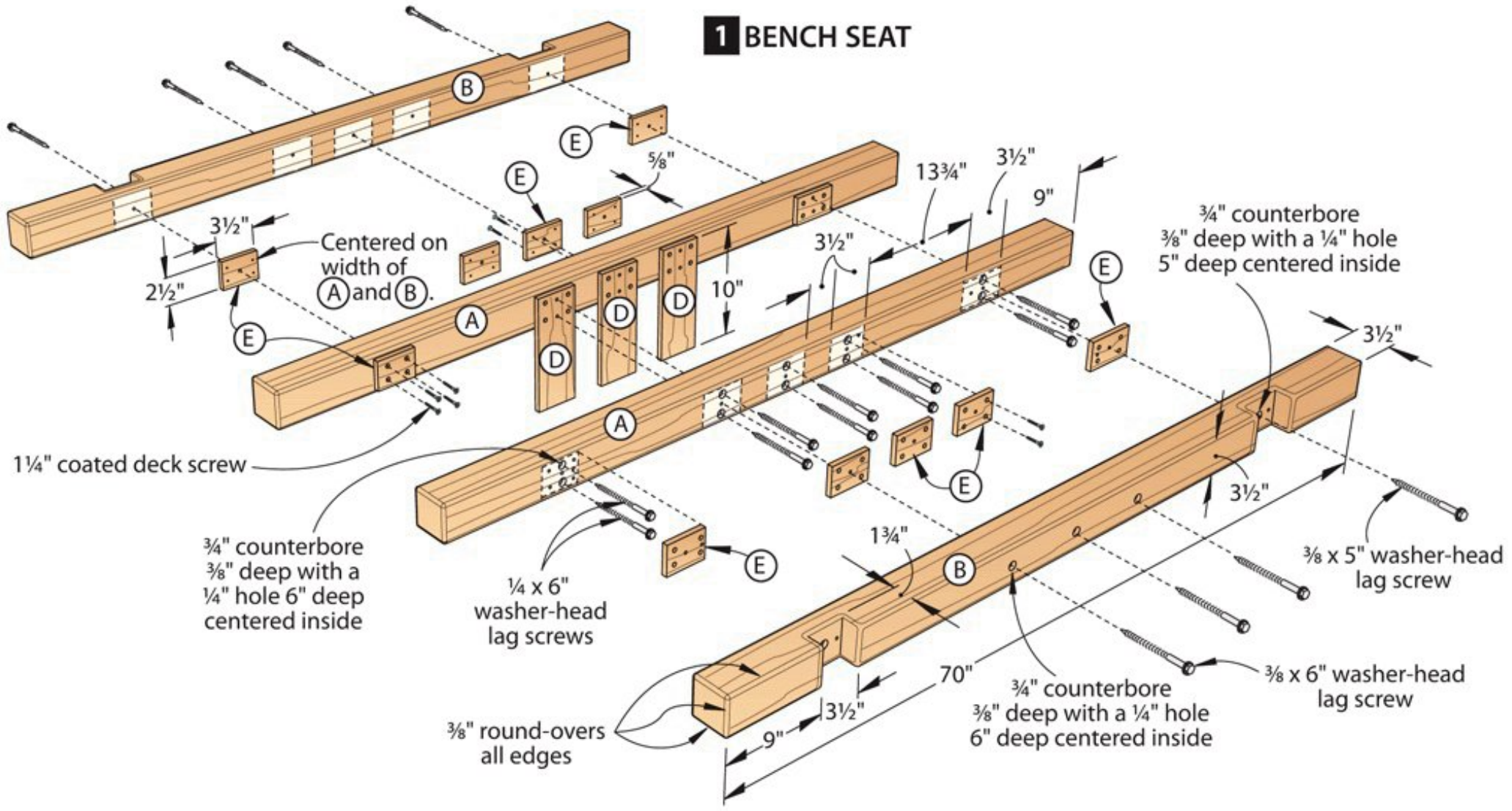
www.journal-plaza.net & www.freedowns.net

Instead of measuring the leg (C) width to mark the outside seat-slat (B) dado sizes, use the leg itself for a perfect fit.

Using a square to guide your circular saw, cut the second kerf where marked in **Photo A** to establish the width of your dadoes.



After breaking off most of the waste between kerfs, press the flat face of a chisel against the dado bottom and shave it flat.



3 Cut a second saw kerf in each outside seat slat (B) [**Photo B**]. Then saw kerfs about ¼" apart between the two outside kerfs. Break off the waste between the kerfs and smooth the dado bottom [**Photo C**]. Use the same method to dado the legs (C) for the leg rails (F).

4 Rout ⅜" round-overs on all edges of each seat slat (A, B) and leg (C) and around the dadoes. Sand the seat slats and legs to 120 grit.

Assemble a seat slat by slat

1 Cut the long spacers (D) and spacers (E) to size. Sand spacers to 120 grit. **Note:** *Sanding a ⅝"-thick fence picket may thin it to about 9/16" thick, creating a slightly narrower seat-slat (A, B) spacing.*

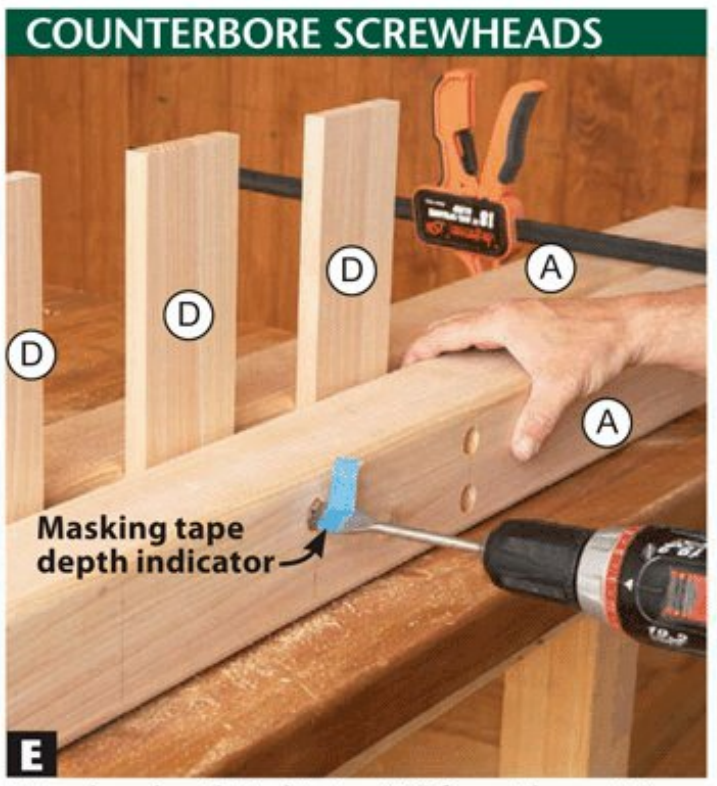
2 Drill and screw the long spacers (D) and spacers (E) to an inside seat slat (A) [**Drawing 1**, **Photo D**]. (For the 1¼" deck screws in this project, we drilled 7/64" countersunk pilot holes.) **Note:** *Drive the screws about ¾" from the ends and edges of the long spacers and spacers to leave room for lag screws joining the inside and outside (B) seat slats.*

3 Clamp the second inside seat slat (A) to the first one with the spacers (D, E) sandwiched between [**Drawing 1**]. Use a spade bit to drill ¾" counterbores and ¼" pilot holes [**Photo E**]. **Note:** *Use the centered hole created by the spade bit spur to position your ¼" bit.*

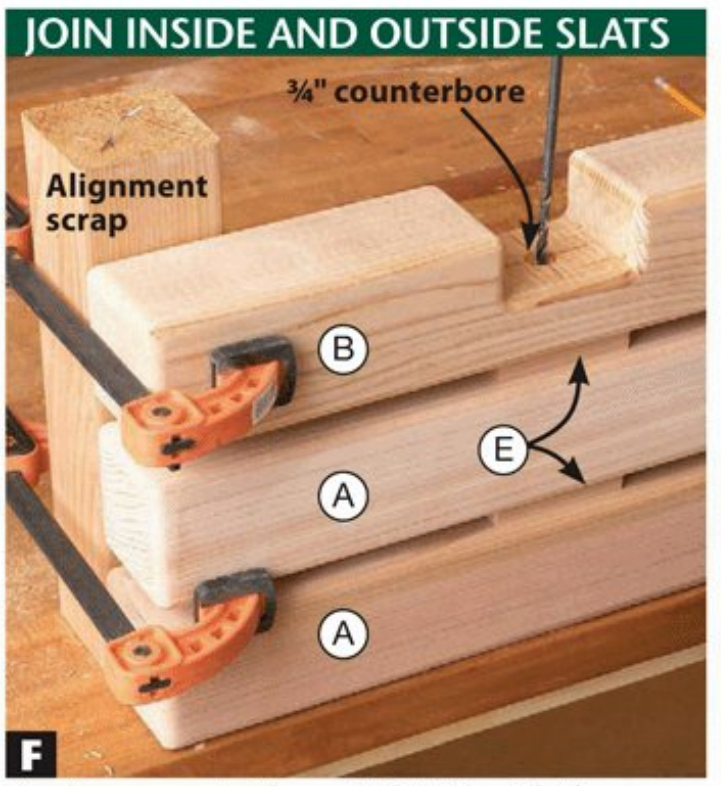
4 Drive washer-head lag screws through an inside seat slat (A) and

Drill and drive one screw to secure a long spacer (D). Then hold it against a square while you drill and drive the other screws.

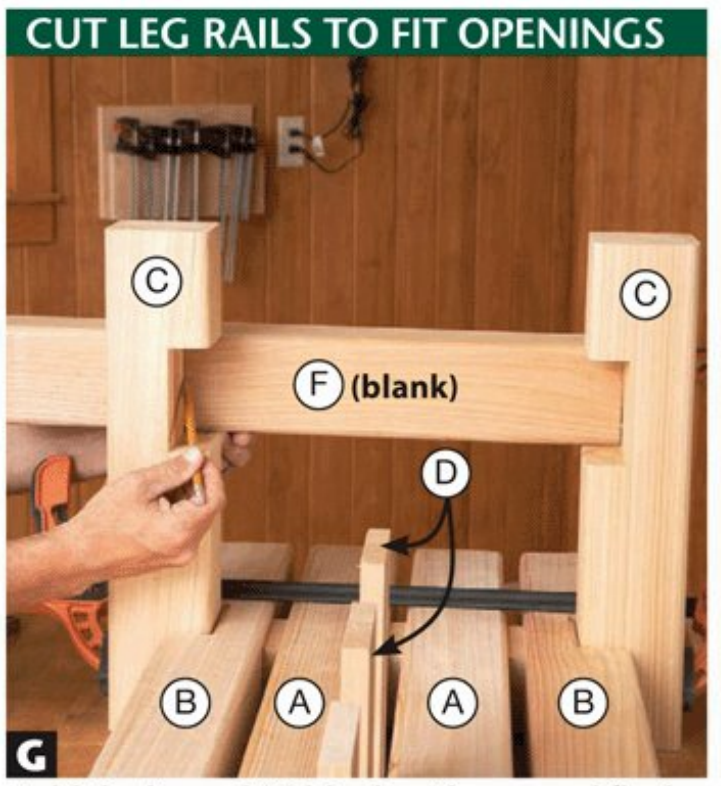
www.journal-plaza.net & www.freedowns.net



Attach a depth indicator ⅜" from the cutting edge of a ¾" spade bit and counterbore the inside seat slat (A) for the lag-screw heads.



To align an outside seat slat (B) with the inside seat slats (A), clamp both to a scrap. Then drill ¾" counterbores and ¼" pilot holes.

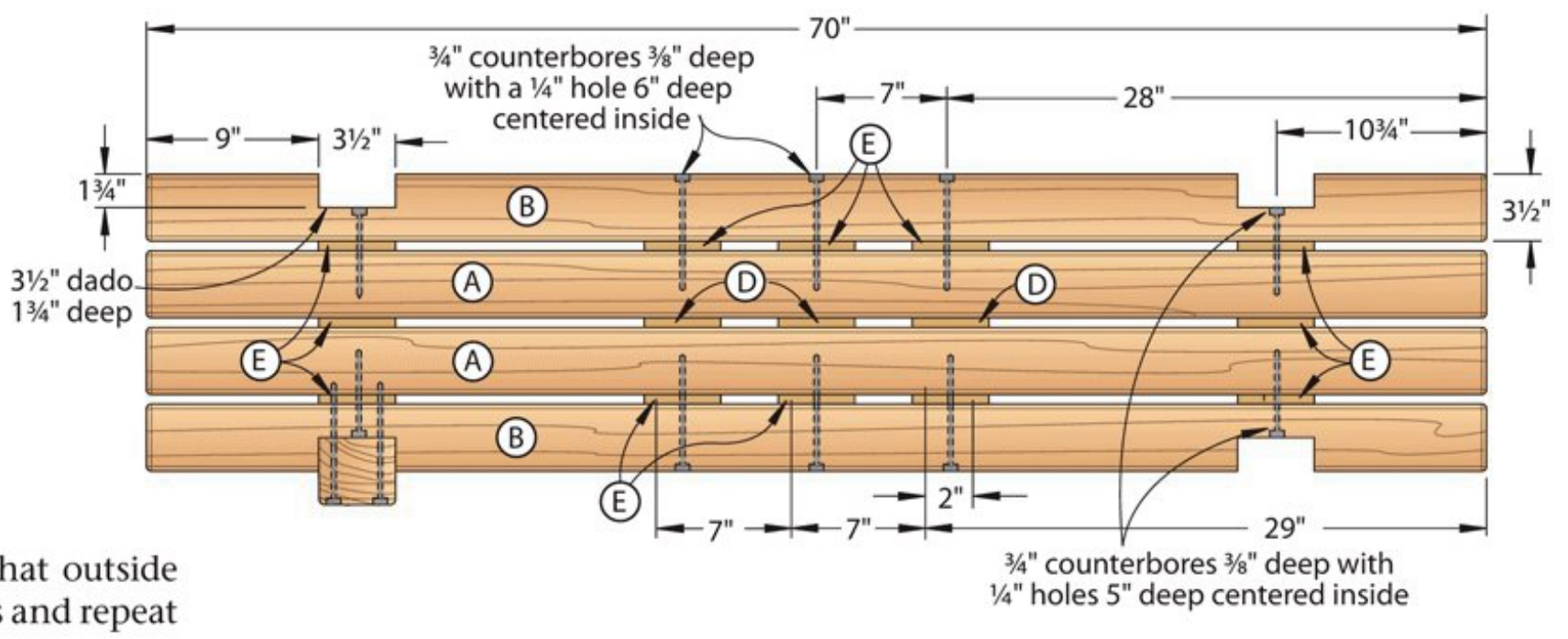


Hold the leg rail (F) blank with one end flush with a leg (C) dado bottom and mark the blank at the other leg dado bottom.

the spacers (D, E), and into the second inside seat slat [**Drawing 1**]. Make certain the screwheads don't stand proud of the inside seat slat surface.

5 On the outside faces, drill and screw the spacers (E) to both inside seat slats (A). Clamp an outside seat slat (B) to the inside seat slats and spacers; then drill counterbores and pilot holes [**Drawing 2**, **Photo F**]. Screw that outside seat slat to the inside seat slats and repeat for the other outside seat slat.

2 OUTSIDE SEAT-SLAT FASTENER PLACEMENT



Turn the seat into a bench

1 Flip the assembled seat (A/B/D/E) upside down and clamp the legs (C) into the dadoes with their ends flush with the top face of the seat slats. Mark and cut a leg rail (F) to fit between two leg dadoes [**Drawing 3**, **Photo G**]. Repeat for the other leg rail and unclamp the legs. Sand the leg rails to 120 grit.

2 Drill and screw two legs (C) to one outside seat slat (B). Drill and screw leg rails (F) to those legs. Then drill and screw the other pair of legs to the opposite outside seat slat and leg rails.

3 Cut the lower stretchers (G) to size. Rout ⅜" round-overs where shown and sand to 120 grit [**Drawing 3**].

4 Center a lower stretcher (G) between the leg rails (F) and mark the stretcher dado locations. Clamp both stretchers together and cut dadoes as you did for the outside seat slats (B) and legs (C).

5 Center and clamp the lower stretchers (G) to the leg rails (F) and long spacers (D). Drill and screw the stretchers to the leg rails and long spacers.

6 Finish-sand the completed bench to 120 grit as needed. For a natural look, apply clear water sealer to reduce checking and allow the wood to weather to a light gray. For added protection, apply two coats of oil-based transparent or semitransparent stain.

SHOP TIP

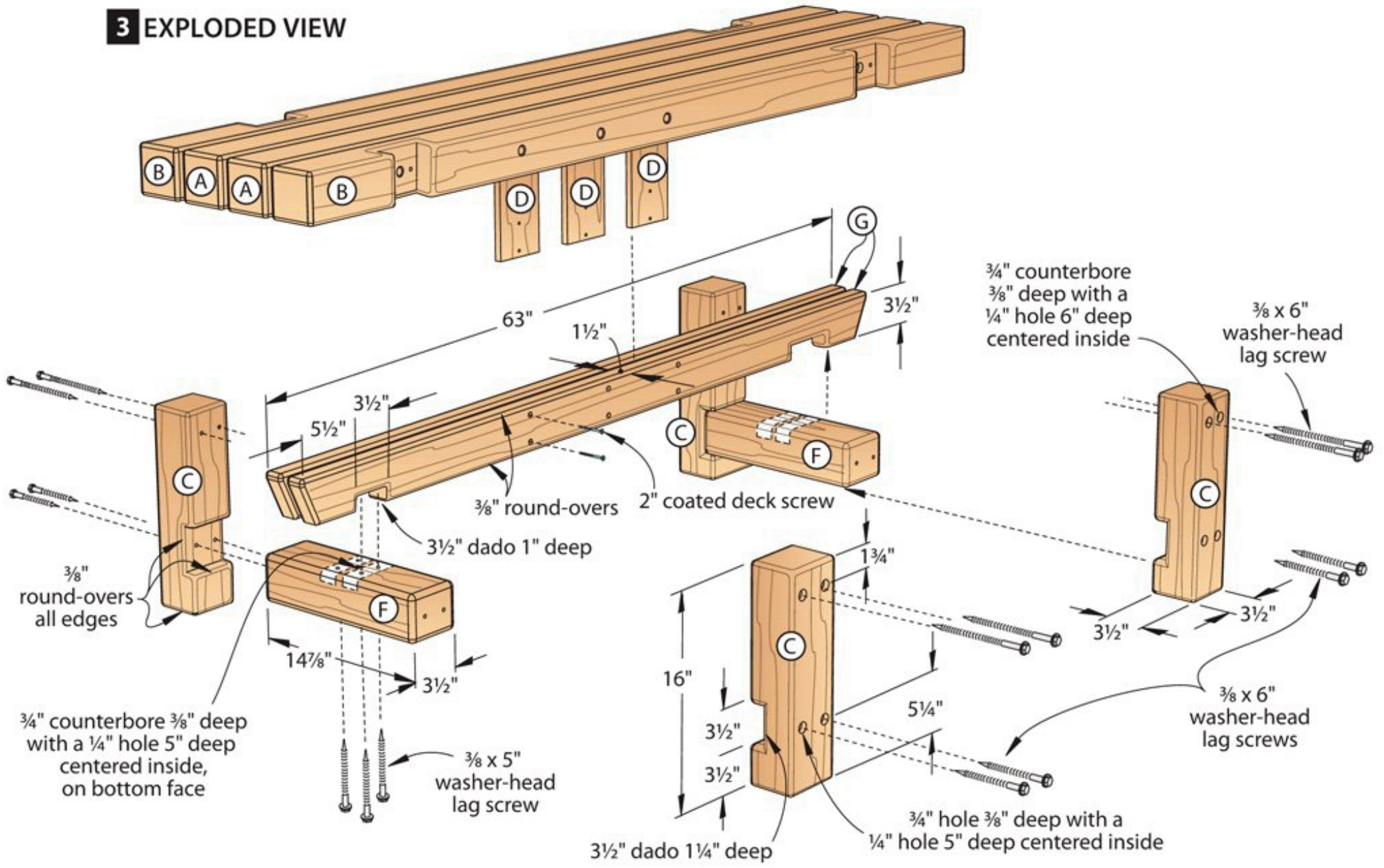
Dry wood first; then build

There's no denying the benefits of pressure-treated lumber: It's strong, reasonably priced, and long-lasting. But it's typically soaking wet when you buy it. No wonder, then, that our air-conditioned shop quickly dried the wet, treated-lumber version until it twisted and cracked, as shown *right*. The lesson: Allow treated lumber to dry in a sheltered area outdoors for six weeks, with stickers between the pieces. Or check the Southern Pine Council Web site (southernpine.com) for local suppliers of treated lumber that's been kiln-dried after treatment.

Written by **Bob Wilson** with **Jeff Mertz**
Project design: **Jeff Mertz**
Illustrations: **Roxanne LeMoine**; **Lorna Johnson**

www.journal-plaza.net & www.freedowns.net

3 EXPLODED VIEW



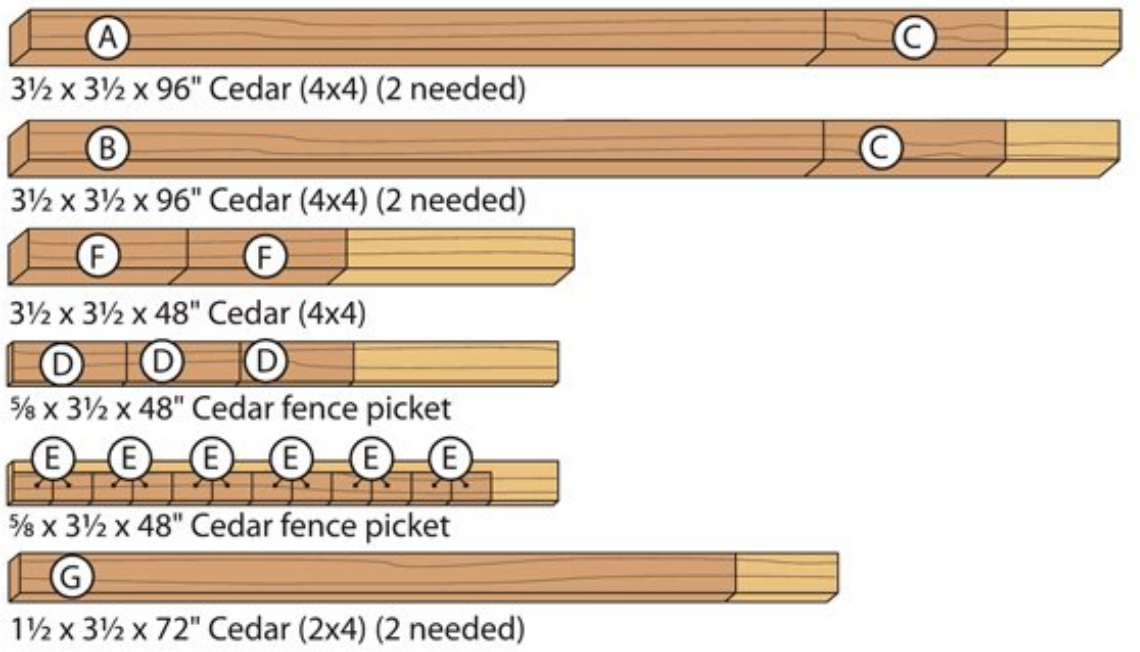
SHOP TIP

Match the fasteners to the lumber

You may pay more for cedar than pressure-treated lumber, but using cedar saves you money on fasteners. That's because treated lumber requires fasteners with coatings or galvanizing to resist the corrosive chemicals in the wood. Here's what we paid for lumber and washer-head lag screws (you may substitute separate lag screws and washers) to build cedar and treated-lumber versions of the bench:

Lumber	Wood Cost	Lag Screws	Total Cost
Cedar	$134	$61	$195
Treated	$36	$127	$163

Cutting Diagram



Materials List

Part		FINISHED SIZE T	W	L	Matl.	Qty.
A	inside seat slats	3½"	3½"	70"	C	2
B	outside seat slats	3½"	3½"	70"	C	2
C	legs	3½"	3½"	16"	C	4
D	long spacers	⅝"	3½"	10"	C	3
E	spacers	⅝"	2½"	3½"	C	12
F*	leg rails	3½"	3½"	14⅞"	C	2
G	lower stretchers	1½"	3½"	63"	C	2

*Parts initially cut oversize. See the instructions.

Material key: C–cedar.
Supplies: ¼x6" washer-head lag screws (10), ⅜x6" washer-head lag screws (22), ⅜x5" washer-head lag screws (12), 1¼" and 2" coated deck screws.
Bits: ⅜" round-over router bit, ¾" spade bit.

www.journal-plaza.net & www.freedowns.net

Miters with Muscle

When your project calls for mitered joints, make them stronger with these proven techniques.

A mitered corner is one of the weaker joints in woodworking because it relies on gluing end grain to end grain. But there are good reasons to make a mitered corner. For one thing, it hides unsightly end grain. And wood grain can be made to wrap continuously around a mitered corner. Here are some ideas to help you make mightier mitered corners.

Glue it right

End grain looks and acts like the end of a bundle of tubes—some solid areas among a lot of openings—so it sucks up glue. Improve your chances of making a strong mitered joint with woodworking glue by generously brushing glue sizing—one part glue mixed with three parts water—onto the joint faces [**Photo A**] to seal them. After the sizing dries, glue the joint, as usual.

Epoxy works well for gluing mitered joints and doesn't require sizing. Beware of quick-setting epoxy if you are gluing several joints at once; allow enough open time for assembly.

Whichever adhesive you choose, always clamp mitered joints for the full cure time recommended by the glue manufacturer. Remember that cool temperatures increase cure times.

FILL SOME PORES

A

Woodworking glue diluted with water seals the open pores in end grain. This increases gluing area and strengthens the joint.

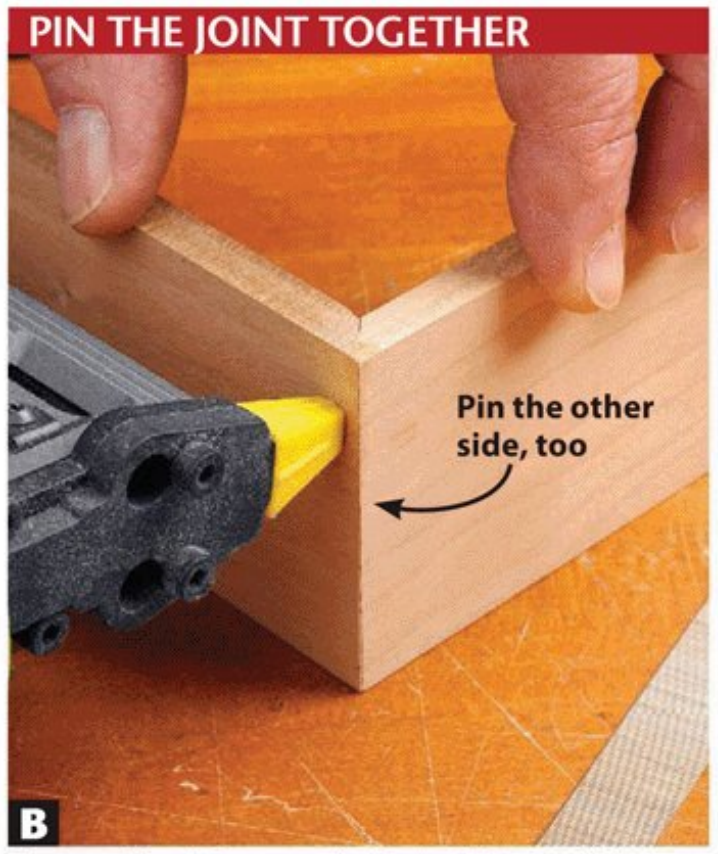
Pop in a pin

Reinforce a mitered joint quickly and easily with a pneumatic brad nailer or pinner. Nailer reinforcement works equally well on frames or boxes.

But beware one major drawback: The thin nail might follow the grain and break out through the surface of smaller pieces. Prevent that by avoiding overly long fasteners and driving them as far from an edge as practical. Pinners, which drive a smaller, headless fastener, are ideal for thin, narrow parts [**Photo B**]. For the most secure joint, drive a brad or pin into the joint from each side.

Another benefit: You can pop these fasteners into the joint while the glue is still wet so the brads or pins hold the joint together without the need for clamps. Still, allow the adhesive to cure fully before handling the assembly.

PIN THE JOINT TOGETHER



B

Short, thin (23-gauge) pins reinforce joints in thin stock with less risk of splitting. A brad nailer works well in heavier stock.

www.journal-plaza.net & www.freedowns.net

Do some splinin'

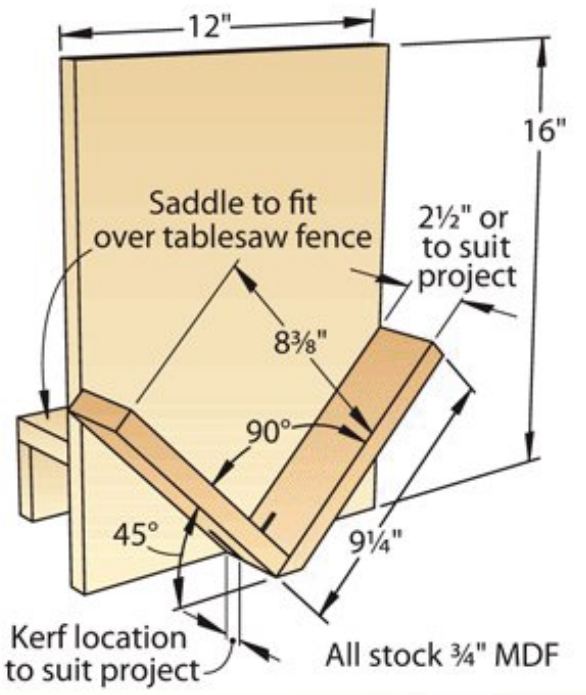
Splines add face-grain gluing surfaces as well as mechanical reinforcement to strengthen a mitered joint. Outside splines serve as decorative elements, too, especially if you use a contrasting wood species. The grain for inside or outside splines must run across the joint for maximum strength.

■ *Outside splines*

Add visible splines to a frame corner after assembling the joint and letting its glue cure. Cut the spline slots using a simple jig, like the one shown at *right*, with a tablesaw [**Photo C**]. Center the spline slots on the thickness of the frame, cutting them to a depth of about two-thirds of the frame-side width. Glue the spline in the slot with its grain running across the joint [**Photo D**], and clamp. Trim the spline flush with the frame after the glue dries.

You can reinforce and decorate box corners with outside splines the same way, modifying the jig dimensions and spline locations as necessary.

SPLINE-SLOT JIG



SLOT THE CORNER

Clamp the frame to the jig for accuracy and safety when you cut a spline slot. For splines, rip thin strips of stock to snugly fit the slots.

GLUE IN THE SPLINE

Apply glue to both sides of the spline, and slide it into the slot. Apply the clamp pads to the the top and bottom faces of the mitered corner.

■ *Inside splines*

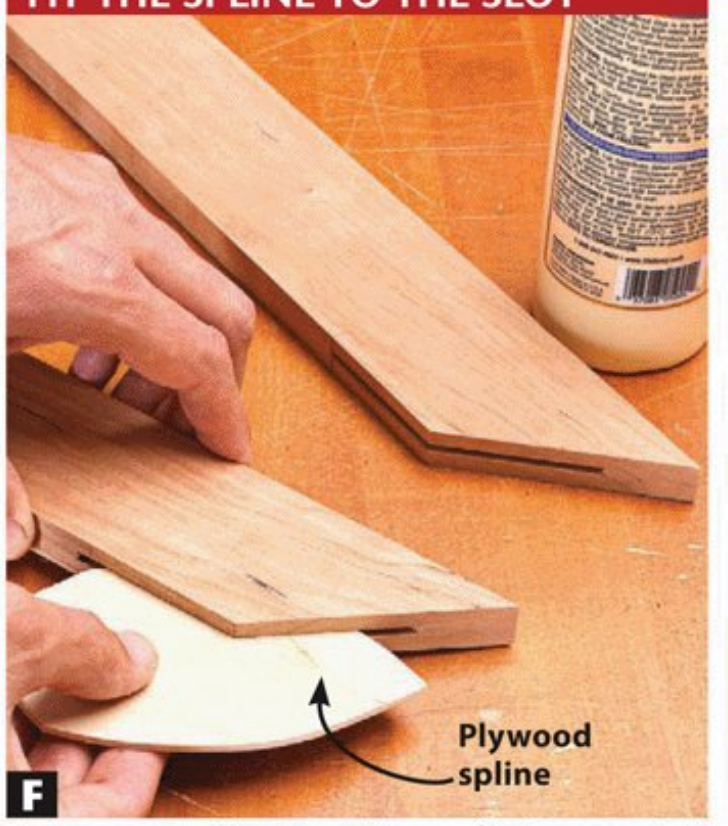
Unlike outside splines, you cut slots for hidden splines in a frame before you assemble the joint. Start by setting your tablesaw fence to center the blade exactly on the thickness of the stock. That's vital because you will slot one side of each corner with the front face against the fence and the other side with the back against the fence. Adjust the cutting depth to about two-thirds the width of the part.

Cut each slot with the short edge of the miter cut against the saw table [**Photo E**]. Make the length of the slot about equal to the width of the stock. Cut a spline from material the same thickness as the saw kerf. Assemble the joint, and glue in the spline with the grain running across the joint [**Photo F**]. Cut the spline flush after the glue dries.

SLOT THE JOINT SIDES

Precisely center the slots on the mitered joint sides to ensure that both faces will be flush when you assemble the joint.

FIT THE SPLINE TO THE SLOT



Jigsaw or scrollsaw a spline to fit the rounded kerf and test-fit before gluing. Plywood and hardboard are good for unseen splines.

www.journal-plaza.net & www.freedowns.net

How about a nice biscuit with that mitered joint?

Biscuits are as effective as splines in adding gluing surface and reinforcement to mitered joints. And, putting biscuits into a joint can be easier and quicker. However, the stock may be too narrow or thin to add them to some joints.

To make a gauge that will aid in choosing the right-size biscuit for a joint, cut biscuit slots of different sizes at the middle of each edge of a 6×6" square of MDF or scrapwood.

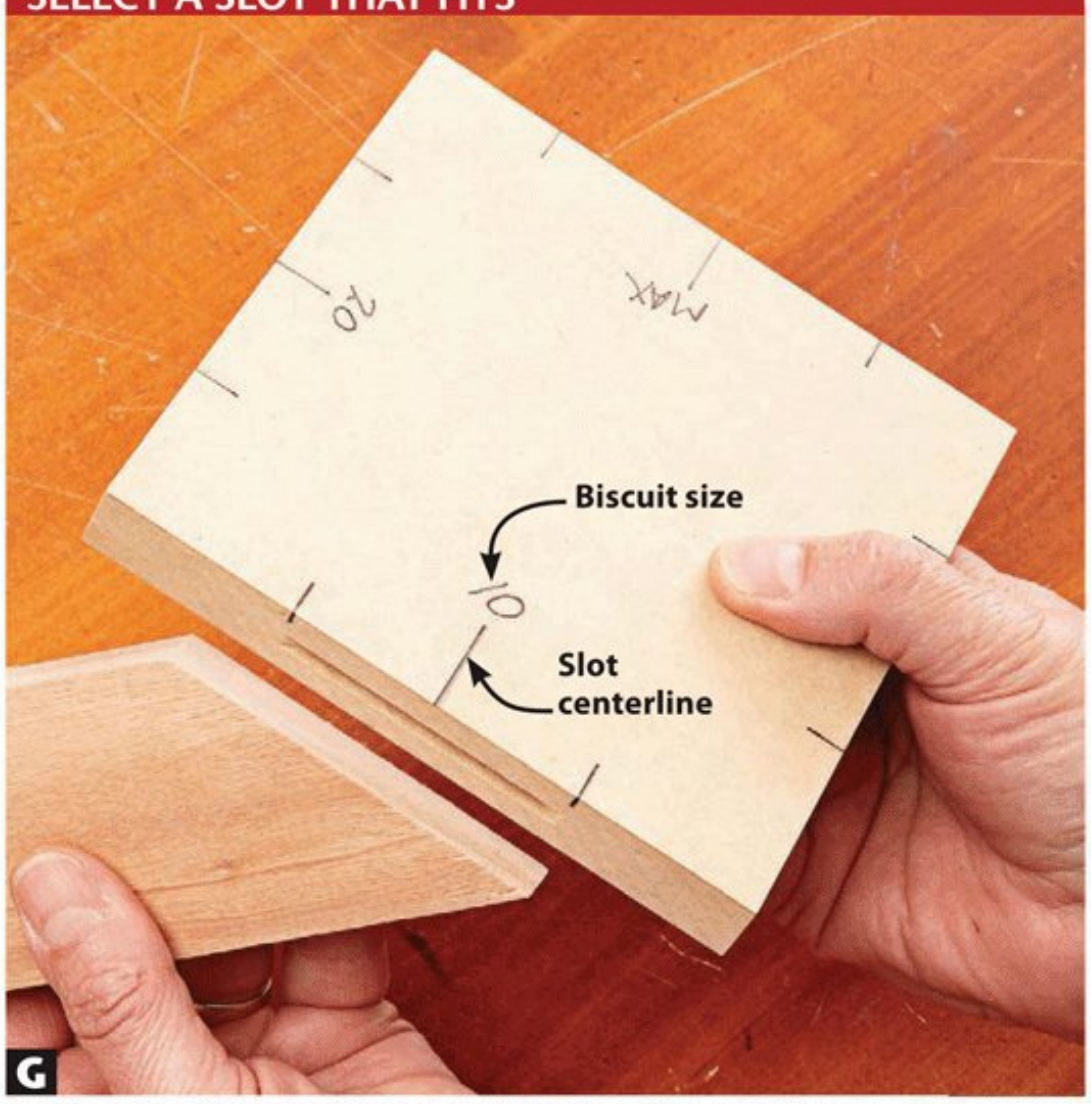
Label each slot for its biscuit size, and mark the centerline and ends for each slot on the face of the gauge. Hold the gauge against the joint parts to determine the biscuit sizes that will fit. Choose the largest biscuit that you can put in the joint.

■ *Frame biscuits*

Determine the biscuit size, using the slot gauge [**Photo G**]. Center the slot in the gauge on one face of each joint, and mark the biscuit centerline on the part. Hold the joint parts together, and transfer the biscuit centerline to the mating part of the joint.

Set the biscuit-joiner fence to 90°, and adjust it to center the slot on the edge of the workpiece. Plunge a slot at each biscuit location [**Photo H**]. Apply glue to the slots and miter faces, insert the biscuits, and clamp.

SELECT A SLOT THAT FITS



Gauge slot sizes against your project parts to determine the correct biscuit. Mark biscuit locations at the slot centerline on the gauge.

PLUNGE INTO THE CORNER

Align the biscuit joiner on the biscuit location marked on the part. Cut the slots for both sides of the joint from the same face.

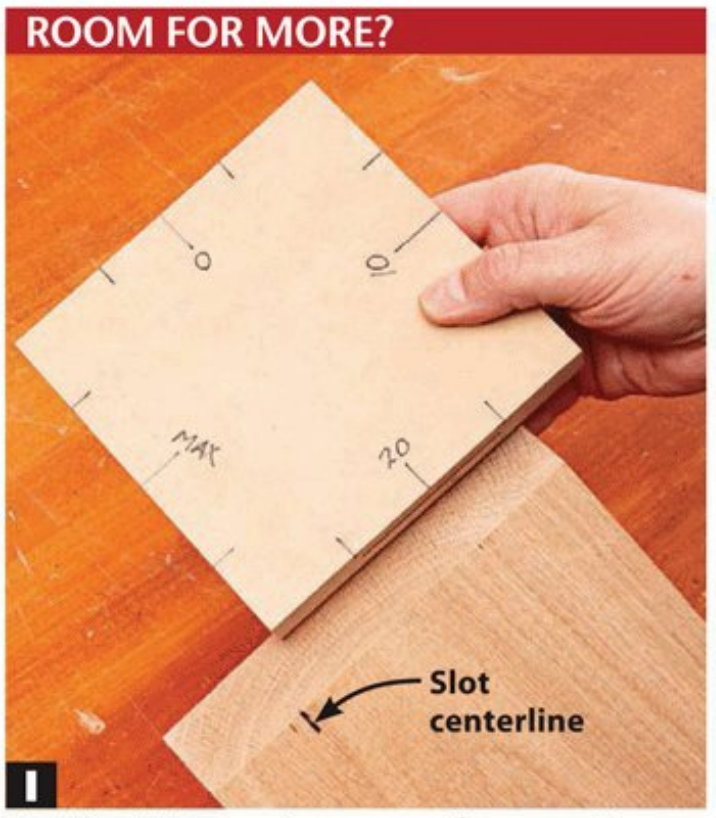
■ *Box biscuits*

Determine the biscuit size and location, using the slot gauge [**Photo I**]. Mark the biscuit centerlines on the short face of one joint side; then hold the joint together and transfer the marks to the other part.

Adjust the biscuit-joiner fence to 45°, and set the distance from the fence to the center of the blade at one-third of the thickness of the part. Test-cut slots in miter-cut stock the same thickness as the joint parts to make sure the slots don't break through the face. Then, plunge the slots [**Photo J**], apply glue to the slots and joint face, insert the biscuits, and clamp.

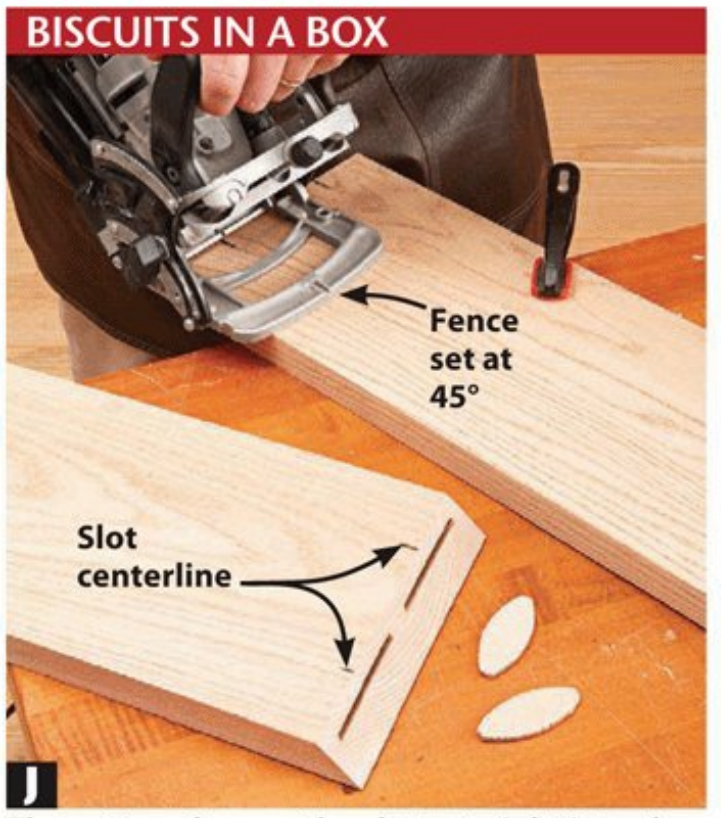
Written by **Larry Johnston**
Illustrations: **Roxanne LeMoine; Lorna Johnson**

ROOM FOR MORE?



A wider joint may have room for more than one biscuit. Space the slots evenly across the face of the joint.

BISCUITS IN A BOX



The cutter plunges the slots straight into the face of the miter cut, allowing easy assembly and gluing of the biscuit joints.

www.journal-plaza.net & www.freedowns.net

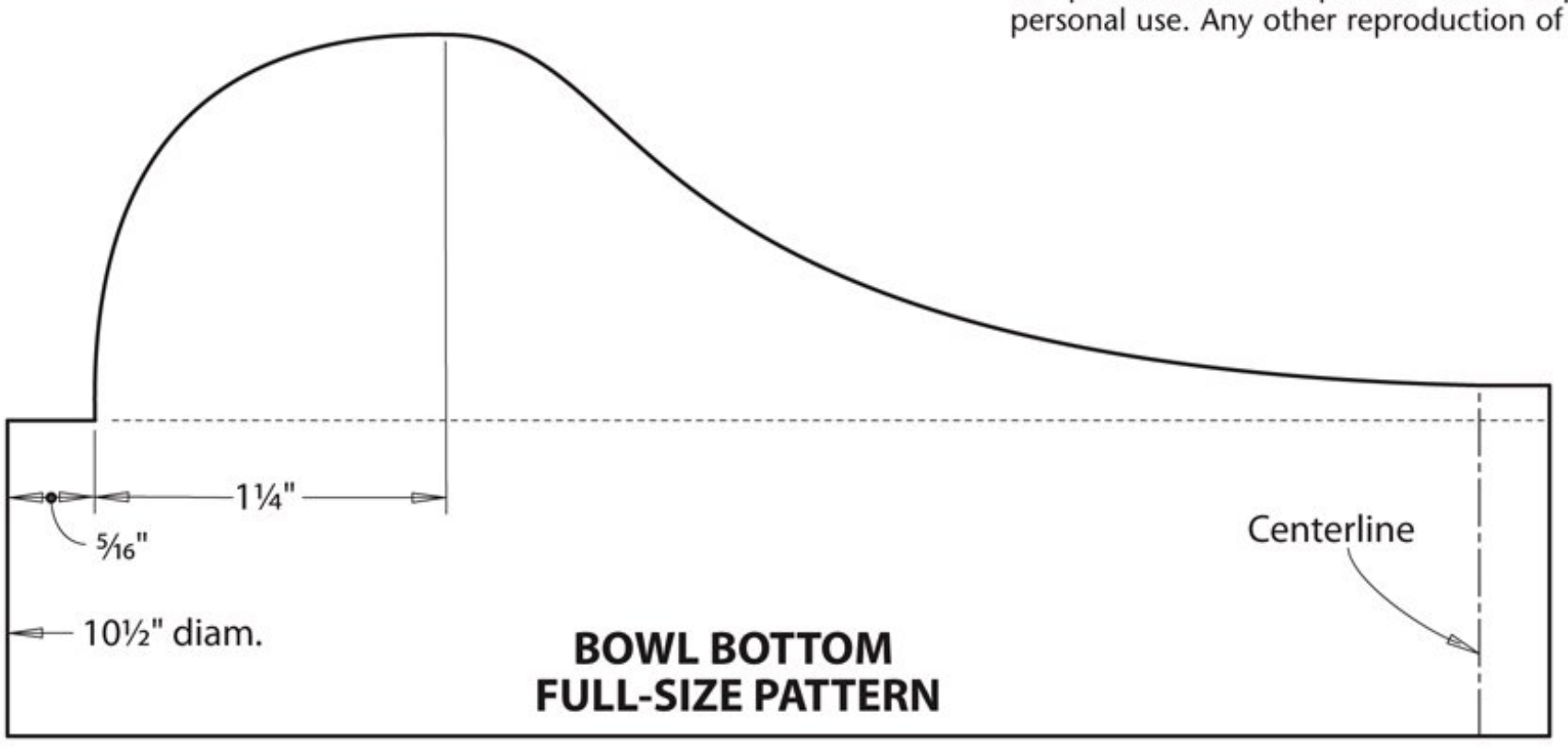
Better Homes and Gardens®

WOOD® PATTERNS®

May 2010 *Issue 197*

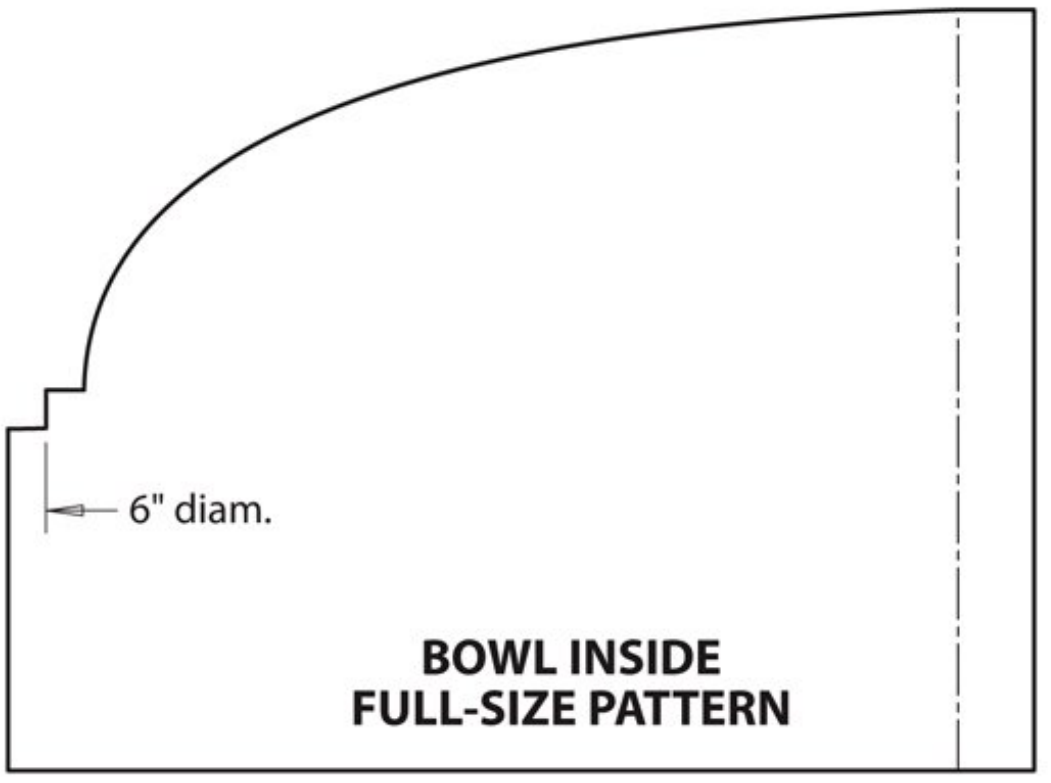
Dear Reader: As a service to you, we've included full-size patterns on this insert for irregular-shaped and intricate project parts. You can machine all other project parts using the Materials List and the drawings accompanying the project you're building.

© Copyright Meredith Corporation, 2010. All rights reserved. Printed in the U.S.A. Meredith Corp., the publisher of WOOD Patterns®, allows the purchaser of this pattern insert to photocopy these patterns solely for personal use. Any other reproduction of these patterns is strictly prohibited.

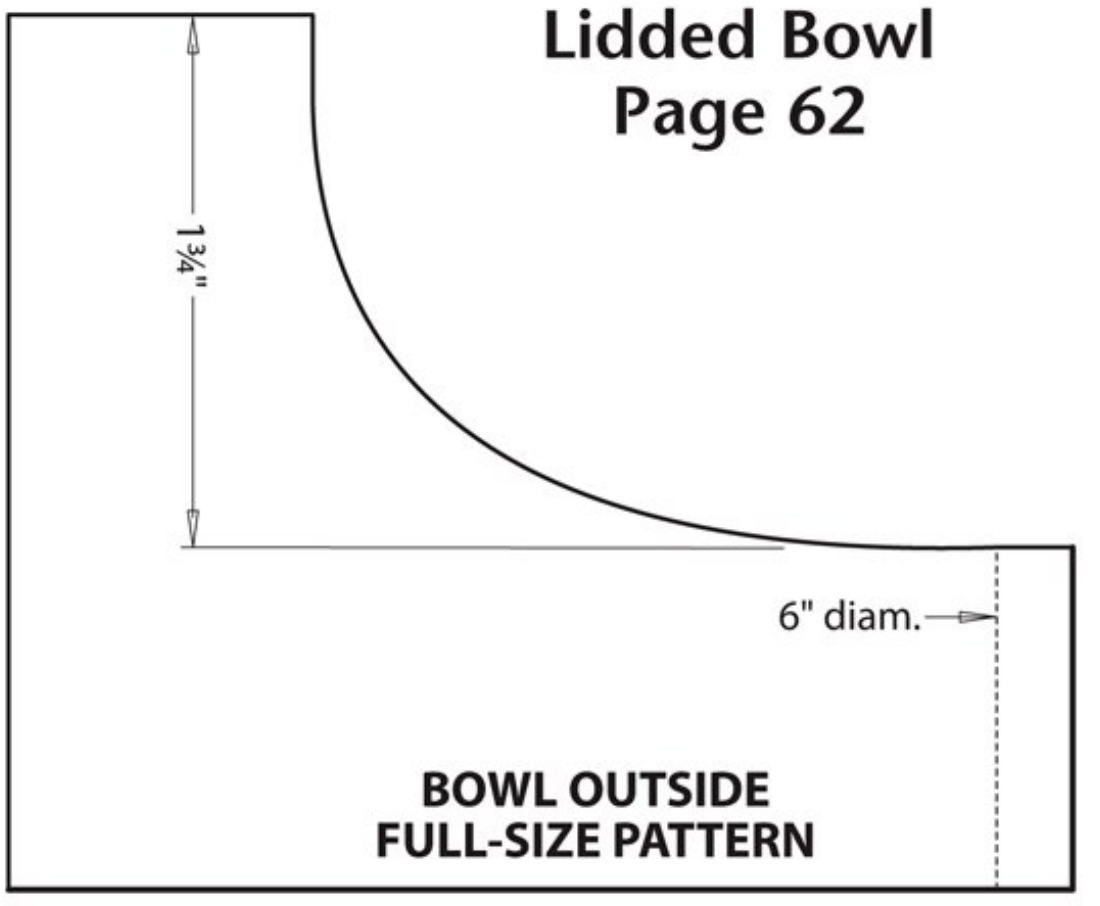


BOWL BOTTOM
FULL-SIZE PATTERN

Lidded Bowl
Page 62

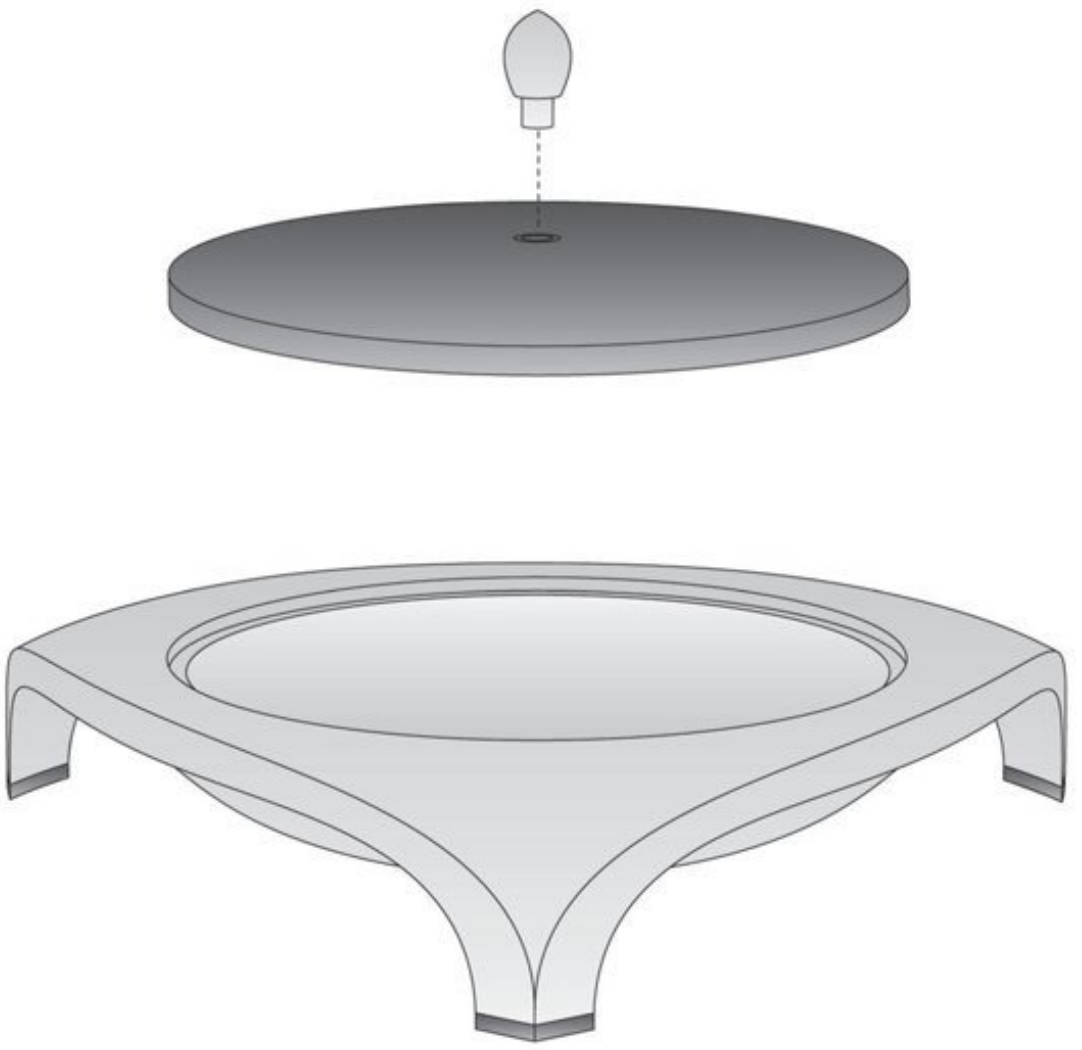


BOWL INSIDE
FULL-SIZE PATTERN



BOWL OUTSIDE
FULL-SIZE PATTERN

www.journal-plaza.net & www.freedowns.net



Lidded Bowl
Page 62

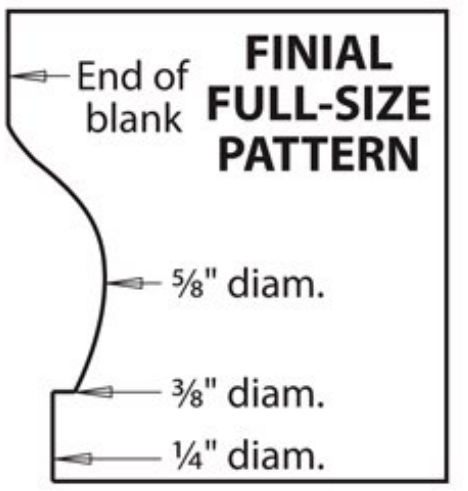
BOWL PROFILE
FULL-SIZE
PATTERN
(3 needed)

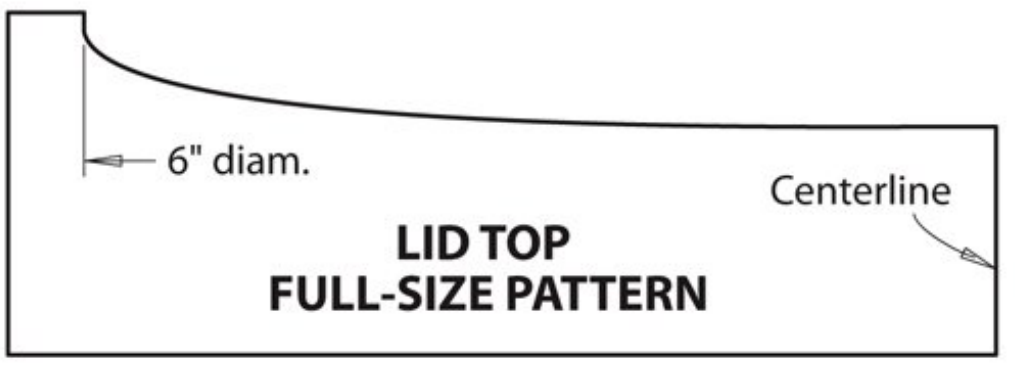
6" diam.

Align patterns here.

Align patterns here.

www.journal-plaza.net & www.freedowns.net





1,100+ woodworking plans at woodmagazine.com/plans

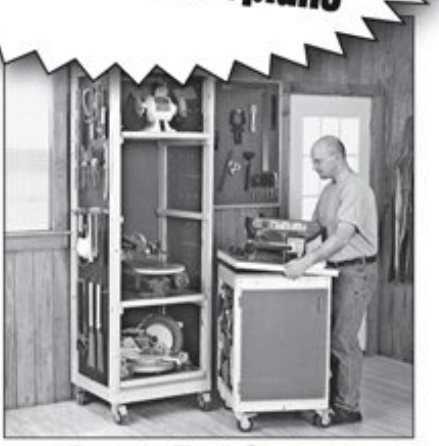
from the editors of WOOD® magazine

Space-Saving Double-Duty Tablesaw Workbench
Plan DP-00553a $7.95

Mobile Sawing & Routing Center
Plan DP-00271 $8.95

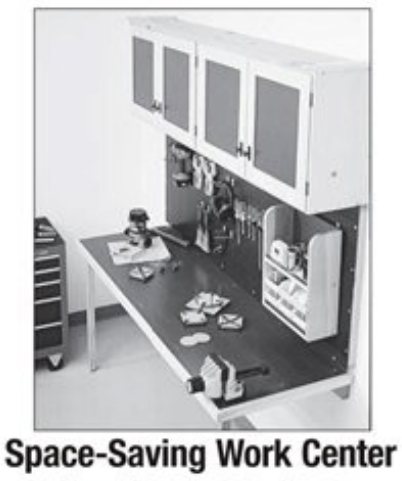
Mobile Tool Cabinet
Plan DP-00260 $7.95

Get'r-Done Shop Cart
Plan DP-00486 $4.95



Bench-Tool System
Plan DP-00560 $6.95

Shop-in-a-Box Tool Cabinet
Plan DP-00518 $5.95



Space-Saving Work Center
Plan DP-00168 $6.95

Flip-Top Work Center
Plan DP-00239 $5.95

Mobile Mitersaw Center
Plan DP-00098 $7.95

Traditional Workbench
Plan DP-00482 $7.95

Download any of these woodworking plans for the prices listed, or view a larger image, at **woodmagazine.com/plans**
To have paper plans mailed directly to you (add $3 per plan plus S+H), call **toll-free 1-888-636-4478**. Please have your credit card available.

WD0510

www.journal-plaza.net & www.freedowns.net

"Daddy, the toilet won't stop running!"
"Can I move my bedroom into the basement?"
"Uh-oh! Dad's gonna freak when he sees that hole in the wall..."
"Honey, what do you think about mauve in the dining room and hunter green in the kitchen?"
"How am I ever gonna get all this done?!?"

Let us help with your homework

How to save your weekend...

Don't pay someone else to tackle that home-improvement project.
Do it yourself and save! These downloadable videos show you step-by-step
how to complete any home how-to project. From plumbing to painting.
From kitchens to baths. From floor to ceiling. Indoors and out.

Download. Learn. Do.

Home How-To
VIDEO CENTER

Every home-improvement project starts at www.homehowtovideo.com

WD0510

www.journal-plaza.net & www.freedowns.net

SHOP TESTED

3-HP Tablesaws

With riving knives now required to earn approval by Underwriters Laboratories, manufacturers took the opportunity to freshen up their saws. We tested 9 of them.

According to the old joke, every tablesaw made in the last 50 years came with a free dust collector: the combination blade guard/splitter that sits on a shelf collecting dust. That's because most of us reason that we're smart enough not to stick our fingers into a moving blade. However, kickback can surprise even the most seasoned woodworkers, and many tablesaw injuries caused by kickback could have been thwarted by a riving knife, a steel fin located immediately behind the blade that goes up and down with it and prevents a board from contacting the teeth at the back of the blade.

Our test of today's riving-knife-equipped cabinet saws reveals that you'll be glad to have most of them in your shop. As we discovered, it's the subtle differences and helpful features that separate the top performers from the pack.

WOOD® magazine tool tester Bob Baker uses a power feeder to drive 2"-thick red oak at a consistent rate through this tablesaw.

www.journal-plaza.net & www.freedowns.net

You'll like a riving knife—when you must work without the blade guard

We're all familiar with the traditional tablesaw splitter, with blade guard and antikickback pawls attached, that's been standard equipment for decades. Mounted to the trunnion assembly at the back of the saw, it tilts with the blade, but does not move up and down. A riving knife, as defined by UL, differs from a splitter in that it mounts immediately behind the blade, moves up and down with the blade, and stands no taller than the top arc of the blade.

This allows you to remove the guard and pawls yet keep this safety device in place to make non-through cuts such as tenons and rabbets. Although a riving knife won't protect your hands from contacting the blade, it greatly reduces the chance of kickback. Seven of the nine tablesaws, when tested with standard equipment, qualify as riving-knife saws, based on the UL standard. Six of those come with a separate riving knife that swaps with the blade guard/splitter assembly [**Photo A**]. Of these, we found the changeover easiest on the Grizzly G0691, which has a quick-release sliding mechanism accessible through a cutout in the throat insert. The others require removing the insert to access the tool-free mechanism [**Photo B**], or, as on the Grizzly G0651 and Laguna MTS0300-0180, a wrench to remove the guard assembly. (Both manufacturers told us future models will have tool-free quick-releases for their riving-knives.)

Delta's 36-L352 Unisaw has our favorite riving-knife system. Instead of trading the splitter/guard for the knife, the guard and pawls come off the splitter without tools [**Photo C**], which then drops down to below the blade arc to make it a true riving knife.

As it comes from the factory, neither the Jet JTAS-10XL50-1PK nor Powermatic PM2000 meet UL's definition of a riving-knife saw. Instead, each has a splitter/knife that mounts right behind the blade and moves up and down with it. But when you remove the guard and pawls, the splitter/knife remains taller than the blade [**Photo D**], so you cannot make non-through cuts with it in place. Both manufacturers offer full- and thin-kerf riving knives as optional equipment ($30–$40), but, in our opinion, one should be included as standard gear.

STRAIGHT-OUT RIVING-KNIFE SWAP

AVAILABLE ON:
- General 650R-T50
- General International 50-300 M1
- Grizzly G0651 (shown)
- Grizzly G0691
- Laguna MTS0300-0180
- SawStop Professional

On most of the tested saws, the blade-guard assembly pops out completely, and you insert a riving knife in its place. The best systems, available on all but the Grizzly G0651 and Laguna, require no tools.

CLOSED-KERF INSERTS CAN BE TRICKY

FOUND ON:
- General 650R-T50
- General Int'l 50-300 M1 (shown)
- Jet JTAS10XL50-1PK
- Powermatic PM2000

On saws with closed-kerf throat inserts, you have to reach below the insert or remove the guard and pawls to remove the guard assembly. This also makes blade changes more difficult.

REMOVE THE GUARD AND PAWLS TO CONVERT

AVAILABLE ON:
- Delta Unisaw

Strip the Delta Unisaw of its guard and pawls to reveal its tall splitter. You then lower the splitter, using the front-mounted quick-release lever, to make it a true below-blade-height riving knife.

IT'S CLOSE, BUT NOT A RIVING KNIFE

AVAILABLE ON:
- Jet JTAS-10XL50-1PK
- Powermatic PM2000 (shown)

After removing the blade guard and pawls from the Jet and Powermatic, the splitter/knife remains taller than the blade. This splitter/knife must still be removed for partial-depth cuts.

www.journal-plaza.net & www.freedowns.net

All pack plenty of power

Equipped with identical, sharp, 40-tooth blades, these 220-volt, 3-hp saws cut through all thick hardwoods at a hand-fed rate with no trouble. Even when we hooked up a power feeder, shown on *page 49*, to provide constant feed rates, only the Laguna stalled—and that wasn't until ripping 3"-thick red oak at a faster-than-we'd-feed-it-by-hand rate of 13 feet per minute (fpm). Just to see how much power these saws possess, we progressively jacked the feed rate to 48 fpm—almost 10" per second! At that rate, the 3"-thick oak finally stalled all the saws except the Grizzly G0651.

Don't fret over the fences

All nine saws come standard with T-square-style rip fences that work about equally well. Whether covered with sideboards made of laminate-covered plywood, high-density plastic, or aluminum, they all proved smooth and straight. None have built-in T-track slots for mounting jigs or accessories.

All of the fences lock on the front rails only, so we measured deflection at the back end with a dial indicator while applying sideways force with hanging weights, and also by ripping different sizes of wood and plywood. Seven of the nine demonstrated such minuscule deflection, it would never be noticed. (And kudos to the SawStop fence, the only one not to budge even .001".) The Grizzly G0691 and the Laguna deflected slightly more, but the only evidence of it was a bit of blade scoring.

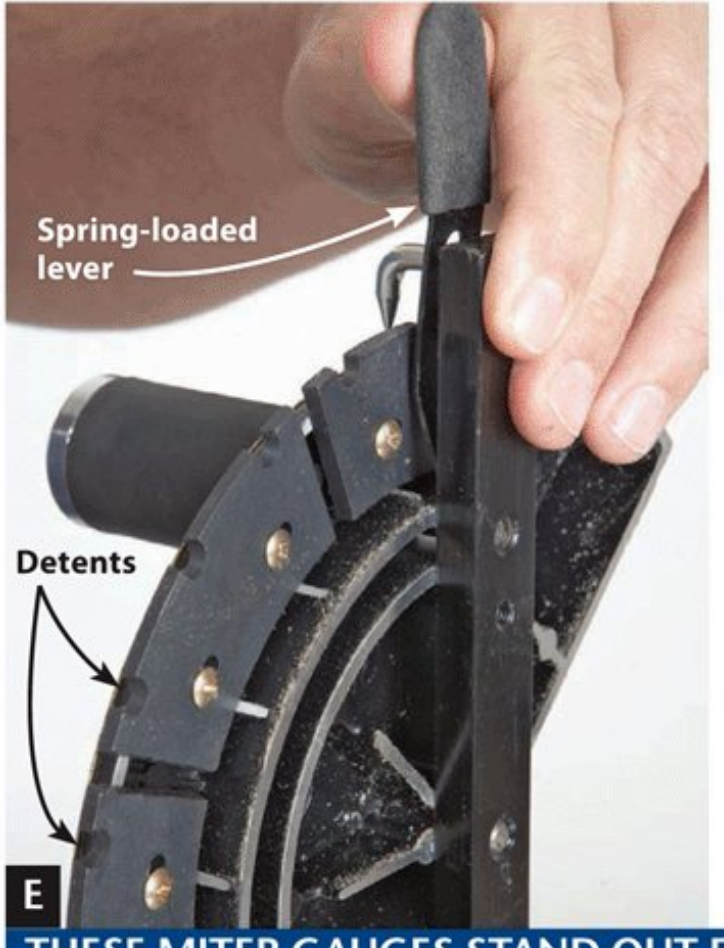
We found most of the rip-fence scales to be accurate. But the Grizzly G0691 and Laguna scales measured 1/64" short every 12". (Grizzly's Bill Crofutt said future models will have a metallic scale rather than this plastic one.) Although all the fences work on each side of the blade, only Delta, Grizzly's G0651, and SawStop include a scale and indicator for the left side.

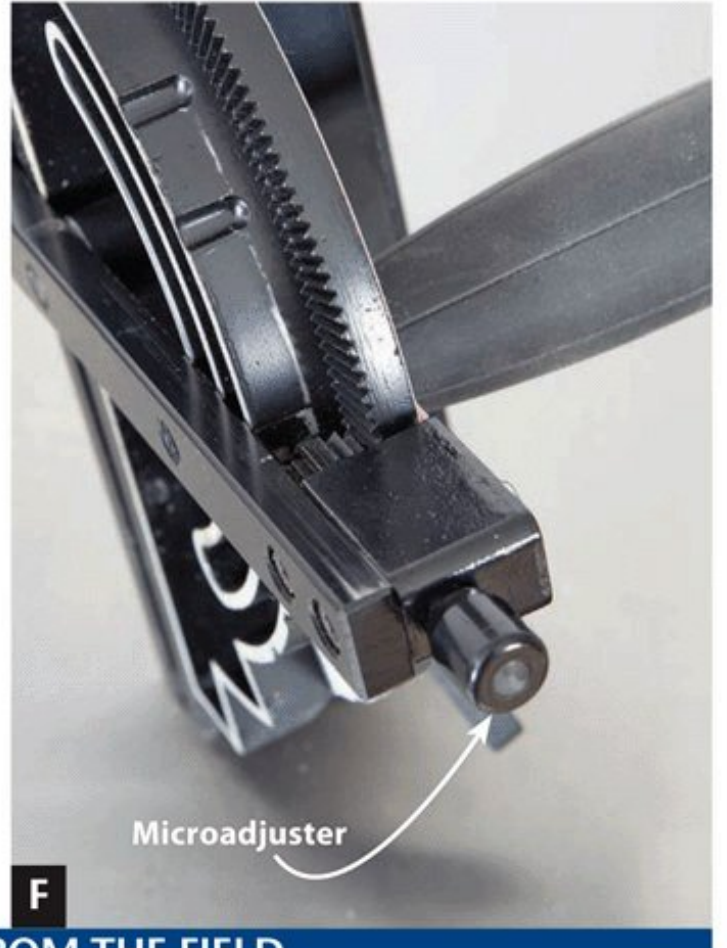
3 miter gauges stand out

Here we saw real differences. The Jet and General come with ho-hum miter gauges with three miter stops and no frills. Four saws (General International, both Grizzlys, and SawStop) have similar gauges, but with width adjusters on the bars to remedy a sloppy fit in the miter slot.

Our favorites are on the Delta [**Photo E**] and Powermatic [**Photo F**]. Delta's has nine miter stops on three adjustable plates, width adjusters on the bar, and a large comfortable handle. The Powermatic has five stops, a microadjuster, a width-adjustable bar, large handle, and a 10"-long fence with T-track.

Laguna's miter gauge also has a fence (with flip-stop) and bar-width adjusters, but it has only three stops, and the fence and flip-stop require a not-included hex wrench to adjust. (Laguna's Torben Helshoj said future gauges will have thumbscrews instead of hex bolts.)





THESE MITER GAUGES STAND OUT FROM THE FIELD

Delta's miter gauge has a spring-loaded lever with a pin that slips into nine detent notches to accurately set common angles.

Besides having five miter detents, Powermatic's miter gauge features a rack-and-pinion microadjuster for fine-tuning.

Other points of interest

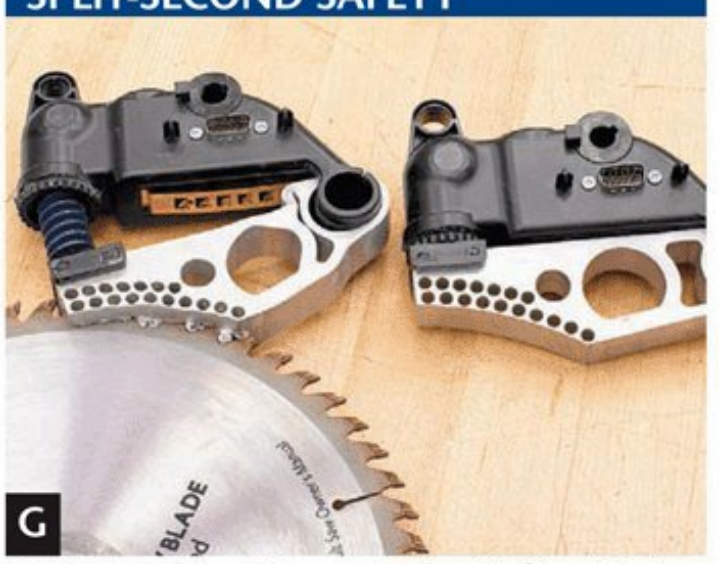
• **Finger saver.** SawStop's blade-brake safety system works to minimize injury should your hand ever contact the spinning blade [**Photo G**]. A brake cartridge mounted below the blade triggers when skin touches the blade, immediately stopping it and leaving you with nothing more than a small nick. You need separate cartridges for 10" blades (standard) and 8" dado sets (optional), costing about $75 apiece. Triggering the brake requires replacing the cartridge and blade, but could well save your fingers.

• **Cut quality.** An expensive saw won't make a bad blade cut better, so it makes sense to outfit the saw with a high-quality blade. Four machines (Delta, both Grizzlys, and SawStop) come with a blade, but of these only Delta's 50-tooth blade made furniture-quality cuts in our tests. When we outfitted the Grizzlys and SawStop with a new, premium blade, we saw improvement with each one.

• **Dust collection.** These saws fall into three categories for gathering dust: those with only a dust port at the bottom of the cabinet (Grizzly G0691 and Laguna); those with a blade shroud that connects directly to the dust port; and those with a blade shroud and a blade-guard mounted dust port (General International and SawStop [**Photo H**]). SawStop's collection proved best in the test.

• **Blade changes.** We found changing blades on the Delta easiest, thanks to its test-best 5"-wide throat opening, one-piece arbor nut and washer, and a large, beefy wrench to go along with an easy-to-use arbor lock.

SPLIT-SECOND SAFETY



A triggered SawStop cartridge (left), with the blade's teeth entrenched in the aluminum brake pawl; a new one (right) ready for use.

DUST CAN'T ESCAPE

SawStop's blade guard hooks up to a small included hose that effectively sucks up all the dust that normally would spew out the top.

www.journal-plaza.net & www.freedowns.net

An in-depth look at riving-knife cabinet saws

Delta Unisaw 36-L352, $3,300

800-223-7278, deltaportercable.com

High Points:

- Our favorite riving-knife system. Quick-release two-piece blade guard and antikickback pawls pop off and the splitter lowers below the blade arc to become a true riving knife.
- The 5"-wide throat opening, largest in the test, makes it easy to change blades.
- We like the convenient front-mounted blade-bevel handwheel, easy-to-read bevel gauge, and easily accessible bevel-stop adjustments.
- The miter gauge has nine adjustable stops, the most in the test.
- Loaded with nice features, such as a one-piece arbor nut and flange; a high-quality blade; built-in setscrews for leveling the extension wings to the top; a storage drawer for blades and accessories; and a large "off" power switch that proved easy to use.

More Points:

- Although the dust port is 4" in diameter, it comes with an adapter for 5" hose.
- An arbor lock makes for one-wrench blade changes.

General 650R-T50, $2,900

888-949-1161, general.ca

High Points:

- At 42¼", its rip fence is longest in the test.
- Shark-fin-style riving knife swaps easily with blade guard. You can also buy a thin-kerf riving knife (#657-21T, $85).

Low Points:

- It does not come with a power cord or blade.
- The aluminum blade guard blocked our view of the blade.
- Difficult blade changes: At 3½", its throat opening is narrowest in the test. It also requires two wrenches to change blades, but only comes with one.

More Points:

- Although the rip-fence scale proved accurate, its clear plastic indicator has a noncolored, scribed hairline cursor that's difficult to read.
- Blade-guard assembly features a tool-free quick-release, but it's tough to access because the throat insert can't be removed before the splitter.

General International 50-300, $2,400

888-949-1161, general.ca

High Points:

- At 42¼", its rip fence is longest in the test.
- Shark-fin-style riving knife swaps easily with blade guard.
- Built-in mobile base, engaged via a large handwheel near the base of the saw, makes it easy to relocate.

Low Points:

- It does not come with a power cord, blade, extension table, or support legs.
- The bevel handwheel exhibited ¼ turn of backlash, and its digital gauge with .1° readout kept losing calibration. We finally ignored it and used the regular scale and pointer.

More Points:

- Although the rip-fence scale proved accurate, its clear plastic indicator has a noncolored, scribed hairline cursor that's difficult to read.
- The miter gauge features width adjusters on the bar, but only three miter stops.
- Blade-guard assembly features a tool-free quick-release, but it's tough to access because the throat insert can't be removed before the splitter.
- Although the blade guard has a 1¼" dust port that proved a benefit at collecting dust, the thin guard frequently slipped into the kerf opening at the rear of the throat insert.
- An arbor lock makes for one-wrench blade changes.

Grizzly G0651, $1,995 800-523-4777, grizzly.com

High Points:

- The best power in the test.
- The power switch with large "off" paddle proved easy to use.
- With digital readout and insignificant backlash, blade-bevel adjustments proved accurate within .1°.
- This mid-priced cabinet saw comes with large outfeed and extension tables and two storage shelves as standard equipment.
- With only three table-mounting bolts, the top is easier to align than the tops on the other saws, which have four bolts.

Low Points:

- Requires a wrench to change to the riving knife. (Grizzly is changing to a tool-free design on future models.)

More Points:

- The miter gauge features width adjusters on the bar, but only three miter stops.
- It comes with a power cord, but no plug.

www.journal-plaza.net & www.freedowns.net

Grizzly G0691, $1,350 800-523-4777, grizzly.com

High Points:

- One of the best saws for swapping the blade guard and riving knife thanks to a quick-release that's accessible through an opening in the throat plate. It comes with a separate riving knife.
- Its rip fence was one of the easiest to adjust.

Low Points:

- The plastic rip-fence scale proved inaccurate, coming up 1/64" short every 12". (Grizzly's Bill Crofutt said future models will have a different, metal scale.)
- With no blade shroud or sloped cabinet bottom, dust collection proved only fair.

More Points:

- The miter gauge features width adjusters on the bar, but they're difficult to use.
- It comes with a power cord, but no plug.

Jet JTAS-10XL50-1PK, $1,700 888-804-7129, jettools.com

High Points:

- Its rip-fence scale with magnified red hairline cursor proved easiest to read and use.
- Built-in storage drawer holds blades and other accessories.

Low Points:

- It does not come with a power cord or blade.
- The splitter/knife stands higher than the blade, and so it must be removed for partial-depth cuts, such as rabbets and tenons. An optional riving knife costs $30–$40.
- The miter gauge fits sloppily in the miter slot and includes no adjustment.
- We were unable to activate the small "off" switch with a leg bump.

More Points:

- To change blades, you must first remove the blade guard and pawls to remove the throat insert.
- An arbor lock makes for one-wrench blade changes.

Laguna Platinum MTS0300-0180, $1,995
800-234-1976, lagunatools.com

High Points:

- When raising or lowering the blade, the trunnion assembly moves smoothly up and down on cast-iron dovetailed ways.
- The blade-bevel handwheel is located on the left side of the cabinet, providing better access than those saws with right-side handwheels.
- Its rip fence was one of the easiest to adjust.

Low Points:

- The rip-fence scale proved inaccurate, coming up 1/64" short every 12". (Laguna's Torben Helshoj said he will investigate this and find a replacement scale for models affected.)
- Requires a not-included wrench to change to the riving knife. (Laguna is changing to a tool-free design on future models.)
- It does not come with a blade.
- Holes in the fence rails did not align with holes in the support legs; we had to drill to fit.

More Points:

- The miter gauge features width adjusters on the bar as well as a 15"-long fence with flip-stop, but you must use a not-included metric wrench to loosen and reposition the fence and flip-stop. (Helshoj said future models will use thumbscrews.)

Powermatic PM2000, $2,600 800-274-6848, powermatic.com

High Points:

- This miter gauge is one of our favorites, with five miter stops, a microadjuster, and a fence with T-track.
- Same easy-to-read rip-fence scale with magnified red hairline cursor as on the Jet tablesaw.
- Large "off" button proved easy to use.

Low Points:

- It does not come with a blade.
- The hybrid splitter/knife stands higher than the blade, and so it must be removed for partial-depth cuts, such as rabbets and tenons. An optional riving knife costs $30–$40.

More Points:

- To change blades you must first remove the blade guard and pawls to remove the throat insert.
- Its built-in mobile base has four swiveling casters, but the saw raises only about ¼", making it tough to maneuver across uneven floors.
- An arbor lock makes for one-wrench blade changes.
- It comes with a power cord, but no plug.

www.journal-plaza.net & www.freedowns.net

An in-depth look at riving-knife cabinet saws

SawStop Professional, $3,000 866-729-7867, sawstop.com

High Points:

- With its unique blade-brake safety system, this saw protects your fingers like no other.
- Its rip fence did not deflect at all in our testing.
- The power switch with large "off" paddle proved easy to use.
- Outstanding dust collection, thanks to a blade shroud and effective port on the blade guard. Hose support, mounting hardware, and 1¼" hose come with the saw.
- Tool-free, quick-release throat insert and riving knife make for easy changes between the blade guard and riving knife.
- Built-in mobile base makes it easy to relocate.
- It has the best owner's manual and assembly instructions, and all hardware is labeled and sorted in blister packs for easy identification.

More Points:

- Its rip fence is the shortest in the test at 35" long, but it's the tallest at 2¾".
- The miter gauge has width adjusters on the bar, but only three miter stops.

TREAT YOURSELF TO THE BEST:

BRAND	MODEL	DIMENSIONS, INCHES		CAPACITIES, INCHES					RIP-FENCE SIDEBOARD MATERIAL (2)	BLADE CHANGES: 1 OR 2 WRENCHES	TYPE OF DRIVE BELTS (3)	NUMBER OF MITER-GAUGE ANGLE STOPS	DUST-PORT DIAMETER, INCHES	
		OVERALL, H×D×L	TABLETOP, D×L	MAX. CROSSCUT (1)	MAX. RIP, LEFT OF BLADE	MAX. RIP, RIGHT OF BLADE	MAX. BLADE HEIGHT AT 90° BEVEL	MAX. BLADE HEIGHT AT 45° BEVEL						
DELTA	36-L352	41×47×87	31×82½	13⅞	14¾	52¾	3⅛	2⅛	L	1	T	9	4	
GENERAL	650R-T50	39×47×84	28×72¼	12⅞	13½	50	3⅛	2⅛	L	2	2	3	4	
GENERAL INTERNATIONAL	50-300 M1	41×47×84	29×42	10⅜	12¾	50	3	2⅛	L	1	F	3	4	
GRIZZLY	G0651	41×76×91	27 ×76	10¼	18	52	3 3⁄16	2 3⁄16	A	2	F	3	4	
	G0691	39×45×82	27×73½	12⅝	13¾	49½	3⅛	2 3⁄16	P	2	3	3	4	
JET	JTAS-10XL50-1PK	38×43×84	29×78¼	10⅜	14¾	51½	3	2⅛	P	1	F	3	4	
LAGUNA PLATINUM	MTS0300-0180	47×45×82	27×73½	12½	13⅞	50	3⅛	2⅛	P	2	F	3	4	
POWERMATIC	PM2000	40×45×84	30½×75	11¼	14	51	3⅛	2⅛	P	1	F	5	4	
SAWSTOP	PROFESSIONAL	34×33×85	27¼×84¼	10¼	13	52	3⅛	2¼	L	2	F	3	4	

1. Measured from front edge of table to blade at full height.

2. (A) Aluminum
   (L) Laminate-covered plywood
   (P) High-density plastic

3. (2) Two V-belts
   (3) Three V-belts
   (F) Single flat ribbed belt
   (T) Two toothed, ribbed V-belts

4. A Excellent
   B Good
   C Fair

5. Using 1½-hp dust collector with 4" flex-hose.

www.journal-plaza.net & www.freedowns.net

If we had to write the check...

Because of the wide price range with these tablesaws, from $1,350 to $3,300, your budget might be the primary factor in choosing one. If you can afford them, the feature-packed SawStop Professional and Delta Unisaw rise above the field and share Top Tool honors. The SawStop has the exclusive safety blade-brake—a huge advantage over the field—a rip fence that did not deflect at all, an easy-to-use-and-change blade guard and riving knife, a built-in mobile base, and the best dust collection.

On the other hand, Delta's made-in-the-U.S. Unisaw has our favorite blade guard and riving-knife system, a stellar miter gauge, and the largest crosscut capacity in front of the blade. The big top combines with a massive trunnion to make it the heaviest saw in the test. The Unisaw also has the best standard-issue blade, a storage drawer below the extension table, and the most routinely used controls—blade height and bevel, riving-knife release, and a large dial bevel gauge—all on the front of the cabinet for easy access.

If these saws prove out of your price range, then consider the Grizzly G0691, our Top Value at $1,350. With plenty of power and an easy-to-use riving knife, this Grizz gives you a lot for the money. With changes coming to correct the rip-fence scale's inaccuracy, this saw will serve you well.

Written by **Bob Hunter** with **Bob Baker**

3-HP CABINET TABLESAWS WITH RIVING KNIVES

	PERFORMANCE RATINGS (4)											ACCESSORIES (6)								
	PRIMARY					SECONDARY														
	OBSERVED POWER	ABSENCE OF RIP-FENCE DEFLECTION	ACCURACY OF RIP-FENCE SCALE	QUALITY OF MITER GAUGE	EASE OF USING BLADE GUARD/RIVING KNIFE	EASE OF CHANGING BLADES	EASE OF USING ON/OFF SWITCH	EASE OF ADJUSTING TABLETOP TO BLADE	EASE OF ADJUSTING RIP FENCE	EASE OF ADJUSTING BEVEL STOPS	ACCURACY OF BEVEL SCALE	DUST COLLECTION (5)	EASE OF USING HANDWHEELS	STANDARD	OPTIONAL	NOISE LEVEL, DECIBELS (7)	WEIGHT, LBS	CORD LENGTH, FEET (8)	WARRANTY, YEARS	MOTOR MAKE, COUNTRY OF MANUFACTURE (9)	COUNTRY OF ASSEMBLY (9)	SELLING PRICE (10)
	A	A	A	A	A	a	a	a-	b+	a	a	b-	a	B,P,R	D,O,T,Z	82	660	8	5	MARATHON/U	U	$3,300
	A	A	A	B	B-	c-	a-	b	b	b	b	b+	b+	R	D,T,Z	79	495	N/A	2	BALDOR/U	CA	2,900
	A	A	A	B	B+	b-	a-	b	b	b	b-	a-	b	R	D,Z	80	396	N/A	2	GEN. INT./T	T	2,400
	A	A	A	B	C+	b-	a-	a	a-	b	a	b+	a	B,O,R	D,Z	87	430	10	1	YOUBA/CH	CH	1,995
	A	B+	C-	B-	A	b	b	b	a	b	b	c	b	B,D,R	Z	80	590	6	1	LEESON/CH	CH	1,350
	A	A	A	C+	B	b-	c	b	a-	b	b+	b+	a		D,R,T,Z	83	330	N/A	5	JET/T	T	1,700
	B+	B+	C-	A-	C	b	b	b	a	c	b	c	a	D,R	Z	87	386	6	1	LEESON/CH	CH	1,995
	A	A	A	A	B	b-	a	b	a-	c	a	b+	a		D,R,T,Z	85	540	6	5	POWERMATIC/T	T	2,600
	A	A	A	B	A	a-	a	a-	a-	a-	a	a	a	B,C,R	D,E,O,Z	78	520	6	2	SAWSTOP/T	T	3,000

6.
(B) 10" blade
(C) 10" blade-brake cartridge
(D) Dado throat insert
(E) 8" dado blade-brake cartridge
(O) Outfeed table
(P) 4"-to-5" dust-port adapter
(R) Riving knife
(T) Thin-kerf riving knife
(Z) Zero-clearance throat insert

7. Measured running under no load.

8. (N/A) Cord not included with this saw.

9.
(CA) Canada
(CH) China
(T) Taiwan
(U) United States

10. Prices current at time of article production and do not include shipping, where applicable.

www.journal-plaza.net & www.freedowns.net

Tablesaw Tune-up Tips

Go beyond what's covered in your owner's manual for easy assembly and spot-on accuracy.

www.journal-plaza.net & www.freedowns.net

Whether you're preparing to buy a new tablesaw or putting off some much-needed maintenance on your existing saw, it's critical to get your machine dialed-in so your cuts will be flawless. *WOOD®* magazine tool-testing expert Bob Baker put together and fine-tuned the nine 3-hp cabinet tablesaws reviewed on *page 49*. In doing so, he mastered the process and developed a shop full of shortcuts and tips to help you assemble a new saw or simply give your old one some overdue TLC. Although many of the photos in this article show Bob setting up a 220-volt cabinet saw, nearly all the steps apply to lesser-powered 110-volt contractor-style and hybrid saws as well, with some tips specific for each of those types.

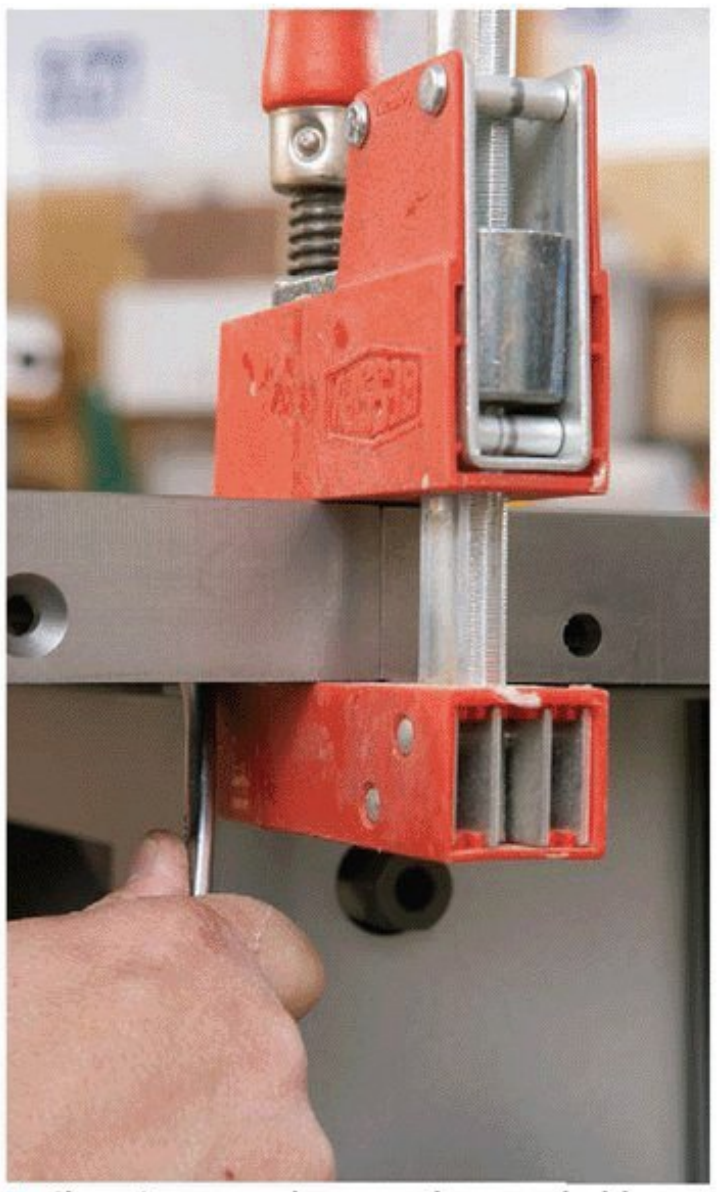
Install the wings flush to the tabletop in 6 simple steps

1. Clamp two straight boards about 3' long to one of the cast-iron extension wings. Extend the boards over the main tabletop.

2. Holding the wing loosely aligned front to back with the table edges, clamp the boards tightly to the main tabletop.

3. Now perfect the edge alignment by tapping the wing laterally with a rubber mallet until the mounting holes align.

4. Insert the mounting bolts and hand-tighten them. If you need to raise the wing slightly, use a scrap board on your leg for leverage.



5. Clamping securely across the seam holds the tops flush. Tighten the bolts when the wing aligns perfectly flush with the main table.

6. To remove sagging, changing a clamp to spreader mode lets you microadjust the wing height. Parallel-jaw clamps work great for this.

www.journal-plaza.net & www.freedowns.net

If your saw has one, add the extension table and level it with the top

LEFT: To save bending down, assemble the extension table, support legs, and frame on your saw's tabletop.
CENTER: Align the mating table surfaces by clamping directly on the seam or using a board with a straightedge and clamps. Bolt them together. Some extension tables bolt only to the fence rails, not the extension wing. For those, install the fence rails first, and then mount the extension table.
RIGHT: Finally, using a long straightedge that reaches from the extension table corners to the cast-iron top, raise or lower the adjustable feet to level the table surface. Tighten the table-mounting nuts when the two surfaces are level.

Align long, beefy rip-fence rails easily with a couple of tricks

OPTION 1: Use two adjustable-height work supports to hold a rail in position while you insert bolts and set the correct height using the template that came with the saw.

OPTION 2: If you don't have adjustable work supports, simply let one rail end rest on the floor while you loosely secure the other with a bolt; then do the other end.

www.journal-plaza.net & www.freedowns.net

8 setup steps to ensure absolute accuracy and clean cuts

1. Using a dial indicator, align your saw's miter slots parallel to the blade, checking the same tooth at the front and back of the blade. Strive to get any discrepancy within .002".

2. If you don't have a dial indicator, you can also do this step with a combination square. Set the blade to touch a tooth in front, lock it, and then check the same tooth at the rear.

3. Once you've aligned the top to the blade, tighten the mounting bolts securely. On cabinet saws the top mounts to the cabinet, providing easy access for adjustments.

4. On contractor-style and most hybrid saws, the top attaches directly to the trunnions that hold the blade assembly. To align the blade, loosen the trunnion-mounting bolts and tap the trunnions side-to-side, then retighten.

5. Now align the rip fence so it's parallel to the miter slots, again within .002". If it's not exactly parallel, any slight discrepancy should toe away from the blade at the outfeed end to avoid pinching boards during rip cuts.

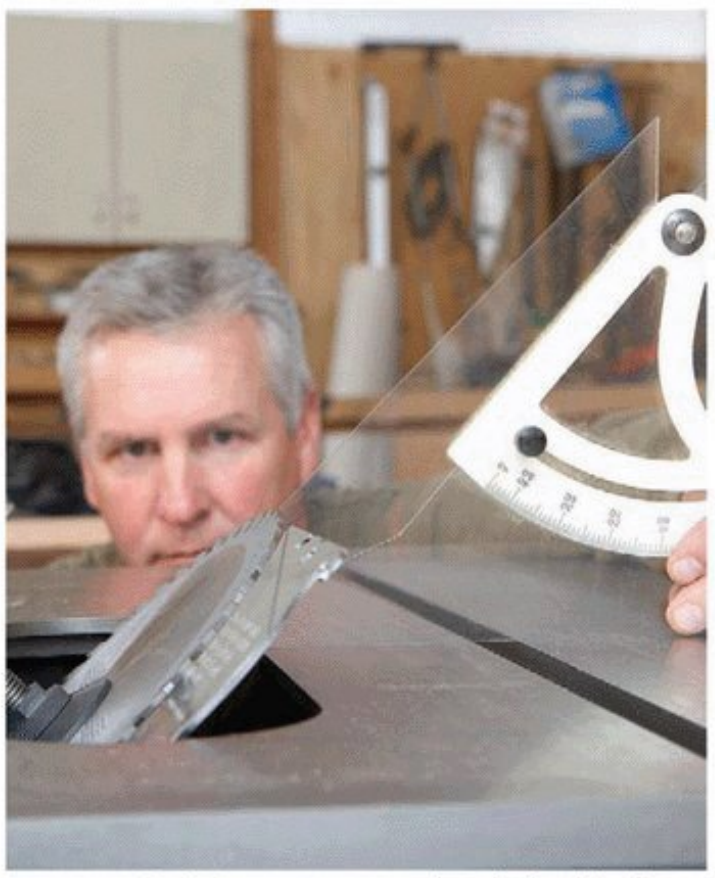
6. Adjust the fence by tightening or loosening the setscrews in the fence's T-square bracket. This also affects how tightly the fence locks and slides on the rail, so plan on trial-and-error fitting to find the sweet spot.

7. Align the riving knife or splitter with the blade. Hold the rule against the plate of the blade so it doesn't touch any teeth. Do this for both sides of the blade.

8. If the riving knife isn't aligned with the blade, adjust its fit by placing thin shims in front of or behind the knife as needed. If you ever remove the riving knife, make note of the shims so you can replace them later.

www.journal-plaza.net & www.freedowns.net

Dial-in the bevel stops and miter gauge for repeatable, reliable settings



1. Use a drafting square to check the blade bevel-angle settings for the 0° and 45° stops. Adjust the bevel stops as needed.

2. Verify the angle settings on your miter gauge, particularly those with stops, against the sawblade plate.

3. Adjust any inaccurate miter-gauge angle stops using a screwdriver, and verify the settings to the blade again.

4. If your miter gauge bar fits too tightly in the slot, rub one edge along 150-grit, self-adhesive sandpaper, applied to your saw's tabletop, until it glides smoothly.

5. If your miter gauge bar fits too loosely in the slot and doesn't have adjustment screws, add dimples every 4–6" by peening it with a hammer and punch.

MORE RESOURCES

RELATED ARTICLES

- "How to Buy a Tablesaw" issue 184 (May 2008). $
- "Amp up Your Tablesaw" issue 176 (May 2007). $
- Hybrid Tablesaw review, issue 187 (Nov. 2008). $
- Miter Gauges & Sleds review, issue 179 (Oct. 2007). $
- Tenoning Jigs review, issue 193 (Oct. 2009). $
- 6" Dado Blade review, issue 188 (Dec./Jan. 2008/2009). $

($=Download these and other articles from woodmagazine.com/plans for a small fee. Type "tablesaw" in the Search box.

FREE PLANS

- Check out dozens of free project plans for tablesaw accessories and jigs at woodmagazine.com/woodworking-plans/tablesaw.

FREE VIDEOS

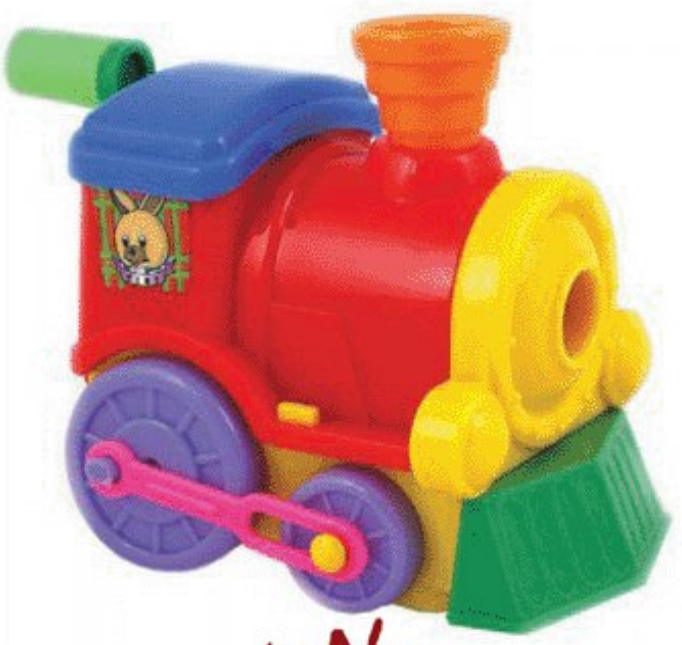
- Watch free related videos from the *WOOD*® magazine staff by visiting woodmagazine.com/woodvision, and then clicking on the "Tablesaw Tips & Techniques" link.

www.journal-plaza.net & www.freedowns.net

✓Yes

✓Yes

✓Yes



xNo

✓Yes

✓Yes

✓Yes

✓Yes

✓Yes

✓ Everyday Low Prices
✓ Easy To Use Website
✓ Huge Selection
✓ Fast Shipping

ROCKAUTO.COM

ALL THE PARTS YOUR CAR WILL EVER NEED

GO TO WWW.ROCKAUTO.COM ROCKAUTO, LLC (EST. 1999) BBB ACCREDITED BUSINESS

www.journal-plaza.net & www.freedowns.net

Three-point Lidded bowl

Created with ordinary turning techniques, a trip to the bandsaw makes it extraordinary.

1 Prepare your templates and turning stock

Make three copies of the **Bowl Profile Pattern** and one copy of each of the six remaining bowl, lid, and finial patterns in the *WOOD Patterns*® insert in the center of this issue. Spray-adhere all the patterns to lightweight card stock, aligning the **Bowl Profile Patterns** as indicated. Cut out each pattern along the solid lines, and cut out the center of the **Bowl Profile Pattern**.

Glue up a 1¾×11¼×11¼" maple blank for the bowl. Laminate ¼"-thick walnut to the bottom of the blank. Also glue up a ¾×6¾×6¾" walnut blank for the lid. Trim the bowl blank to 11" square and the lid blank to 6½" square. Find the center of each blank by drawing diagonals from corner to corner, and set the lid blank aside. Using a compass, mark an 11"-diameter circle on the bowl blank. Bandsaw the blank to rough shape. In the center of the maple face, drill a 1⅜"-deep pilot hole sized to fit your lathe's screw center, and mount the blank.

www.journal-plaza.net & www.freedowns.net

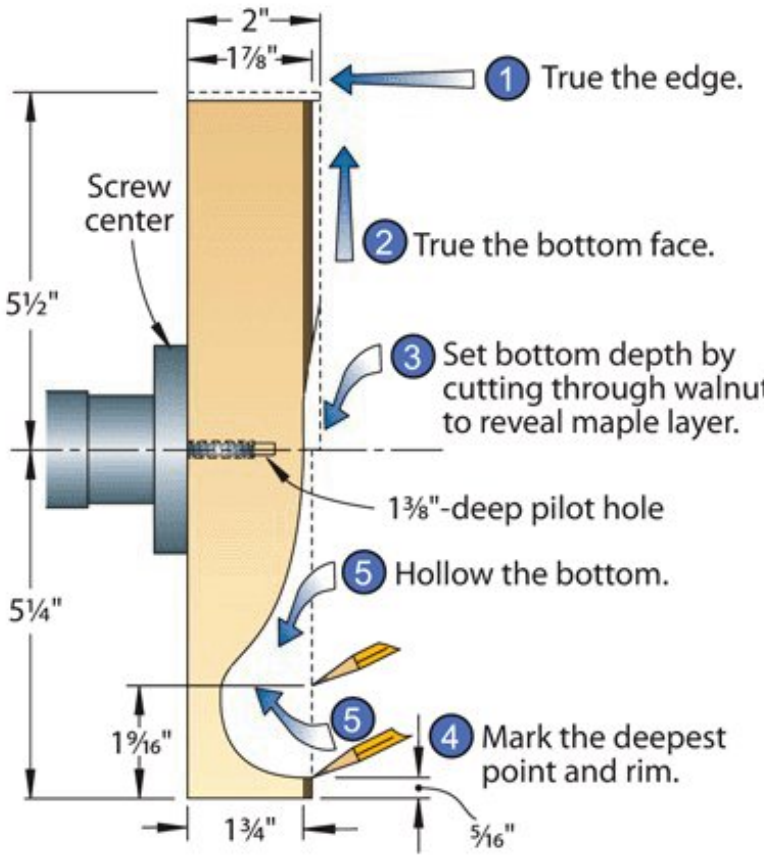
2 True the blank and shape the bottom

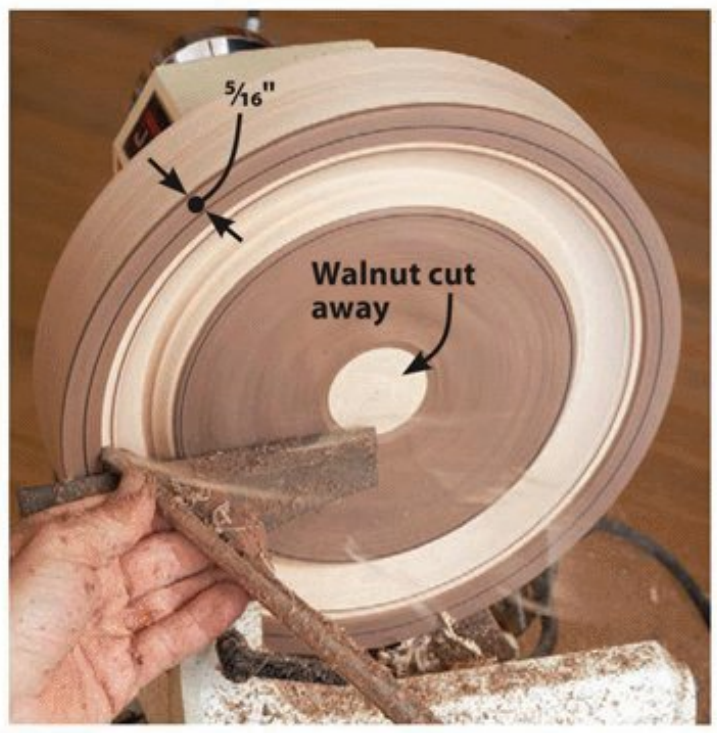
Tool: ⅜" bowl gouge
Speed: 400–800 rpm

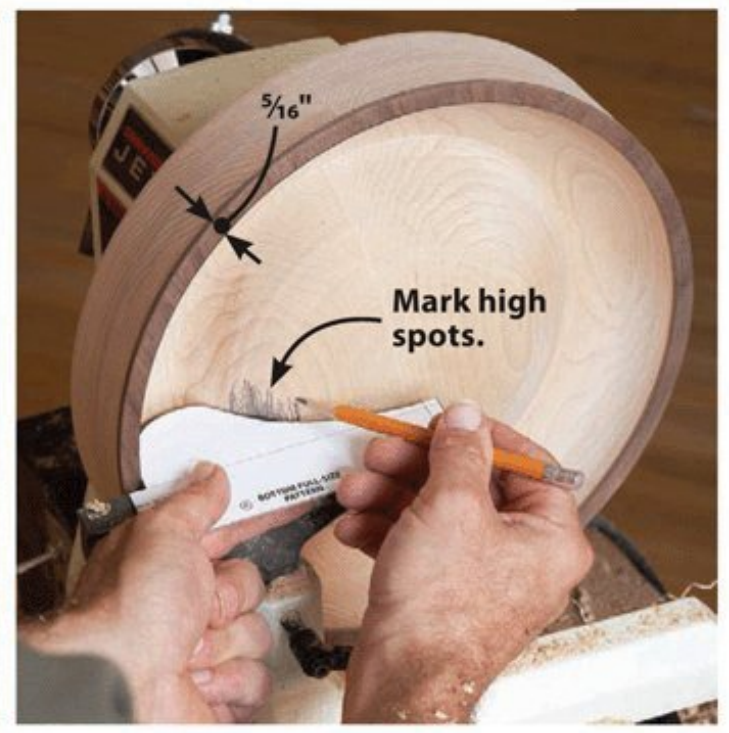
True the edge of the bowl and turn the blank to 10½" in diameter. Move the tool rest parallel to the face of the blank and true the face until the walnut is ⅛" thick. To establish the bottom of the bowl, cut away the walnut in the center to just reveal the maple.

Stop the lathe and use the **Bowl Bottom Pattern** to lay out the 5/16" width of the foot and the deepest portion of the bowl. Begin forming the outside curve of the bowl bottom with push and pull cuts from the outside to the center, as shown *below left,* and pull cuts from the center outward. Stop and use the pattern to check your progress, marking high spots as shown *below.*

After reaching final shape, sand the bottom of the bowl from 80 grit through 320 grit. Remove the bowl from the screw center.







3 Shape the outside of the bowl and begin hollowing

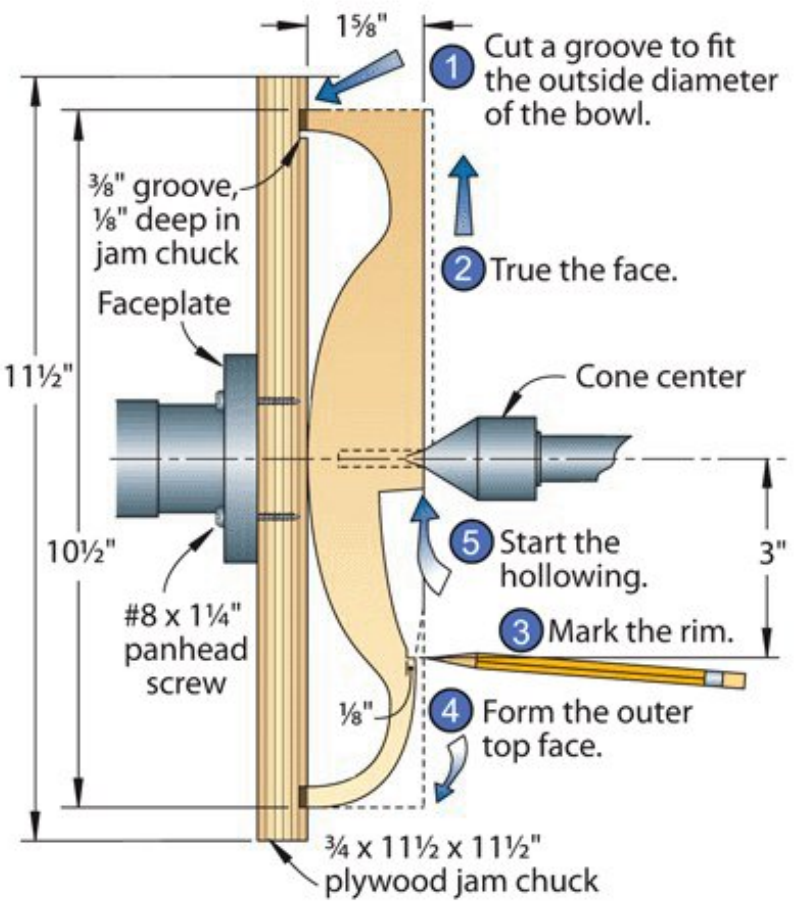
Tools: Parting tool, ⅜" bowl gouge
Speed: 600–1,000 rpm

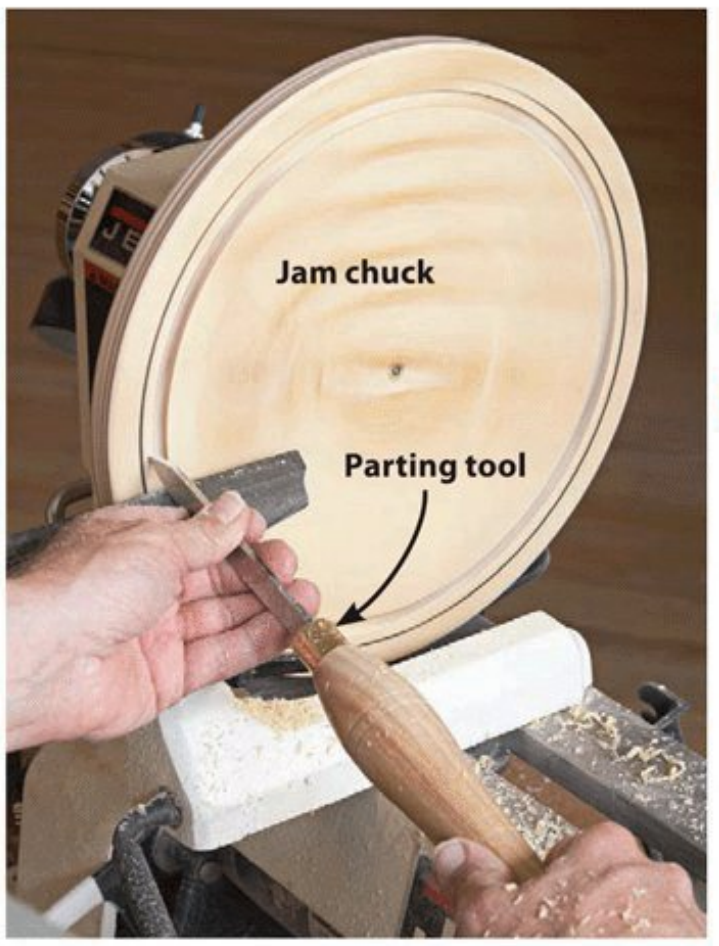
Make a jam chuck by cutting an 11¾" circle from ¾" plywood and mounting it to the faceplate. True the outside edge, leaving an 11½"-diameter blank. With the lathe running at slow speed, place a pencil against the chuck to lay out a circle matching the outside diameter of the bowl. Increase the lathe speed to 1,000 rpm and, using a parting tool, cut a ⅛"-deep groove about ⅜" wide, inside the layout line, *below.* Gradually widen this groove until the bowl rim fits snugly in it. Mount a cone center in the tailstock and use it to apply pressure to the bowl, keeping it firmly against the jam chuck.

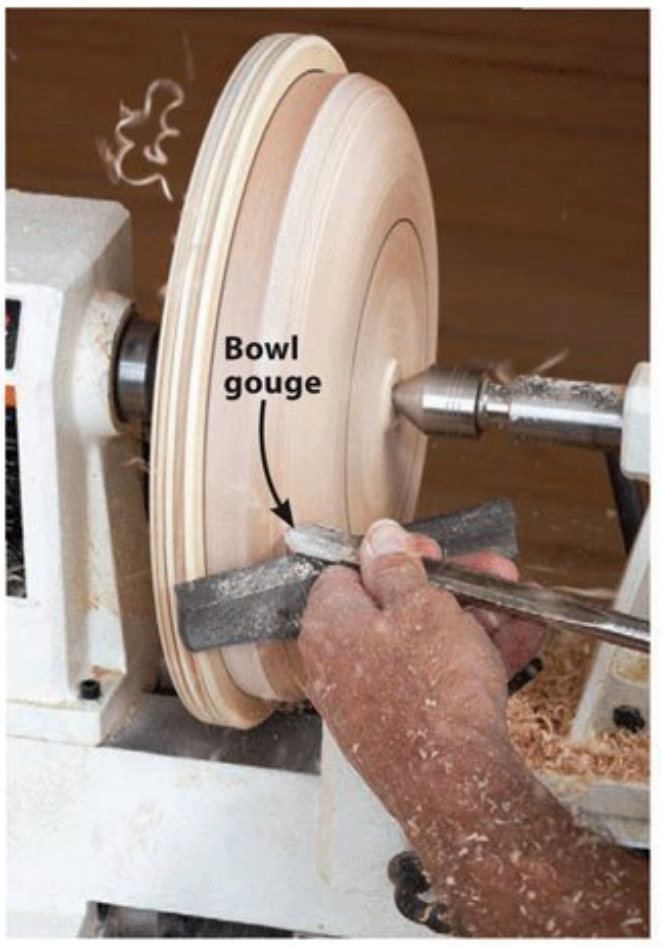
Switch to a bowl gouge and true the face of the blank, reducing it to a thickness of 1⅝" measured from the face of the jam chuck.

Mark out a 6" diameter for the lid rim. Starting at this line, shape the outside edge of the bowl to match the **Bowl Outside Pattern**, *below.* Align the "6" diam." mark on the pattern with the layout line for the lid rim.

With your parting tool, form a ⅛"-deep groove inside the layout line. Using a bowl gouge, begin removing waste from the inside edge of the groove toward the middle, bringing the inside of the bowl to rough shape. (The bottom will be shaped in the next step.) Sand the outside of the bowl to 320 grit.





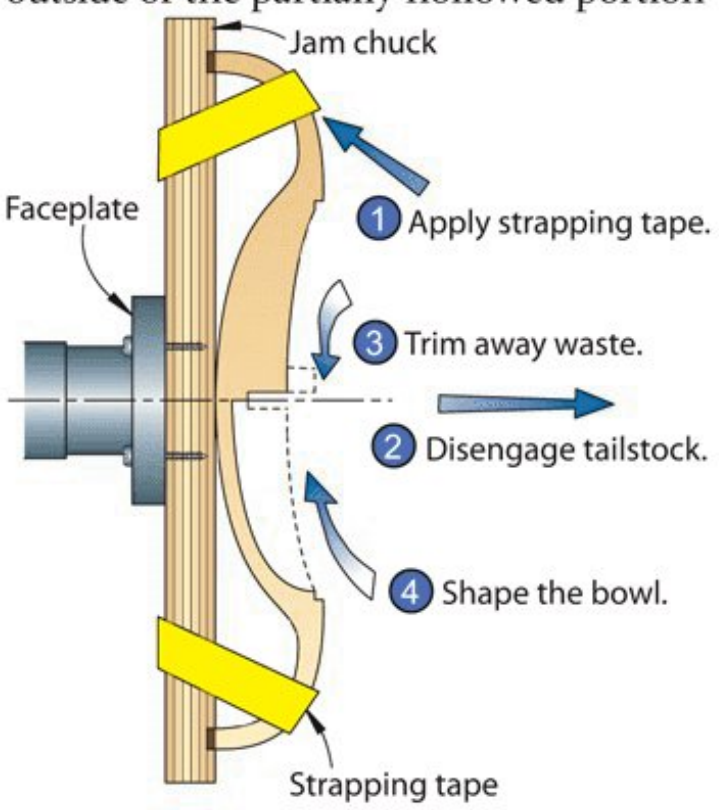


www.journal-plaza.net & www.freedowns.net

4 Hollow out the bowl

Tool: ⅜" bowl gouge
Speed: 800–1,000 rpm

Secure the bowl to the jam chuck by wrapping it with lengths of strapping tape as shown at *right,* keeping the tape outside of the partially hollowed portion of the bowl. ***Quick Tip! Tape the tape.*** If the tape peels away from the plywood, wrap a strip around the circumference of the jam chuck to hold the other lengths of tape in place. Slide the tailstock away, reposition the tool rest, and remove the nub at the center of the bowl. Working from the outside to the middle, begin hollowing out the bowl as shown *below* until it matches the profile of the **Bowl Inside Pattern**. Sand the inside of the bowl to 320 grit, being careful to leave a sharp corner on the recess where the lid will sit.

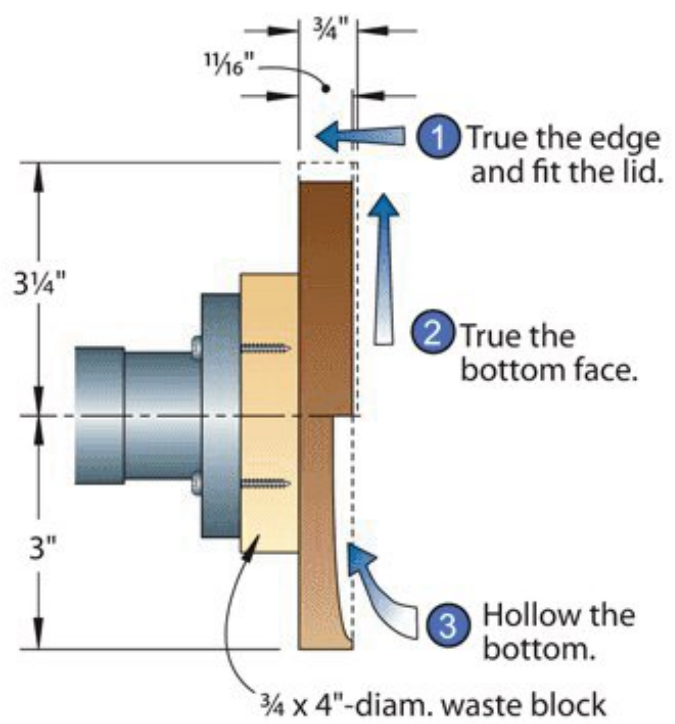


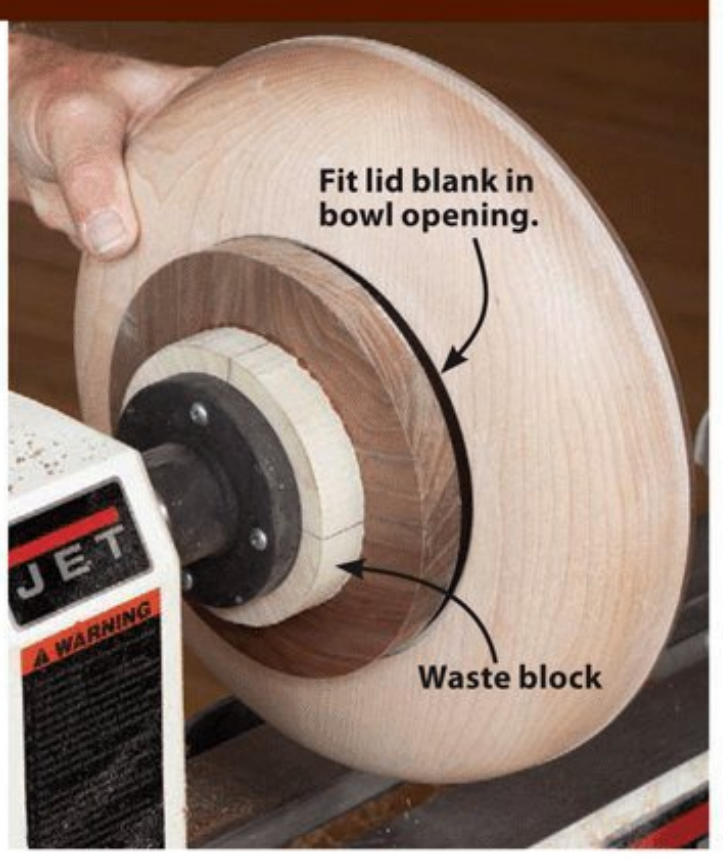
5 Put a lid on it

Tool: ⅜" bowl gouge
Speed: 800–1,000 rpm

On a 4"-square scrap, mark diagonal lines from corner to corner. Using the intersection as the centerpoint, use a compass to mark a 4"-diameter circle, then bandsaw it to shape. Retrieve the lid blank, use the same procedure to lay out a 6½"-diameter circle, and bandsaw it to shape. Glue the 4" scrap to the outside face of the lid blank, aligning the marks. After the glue dries, screw the faceplate to the scrap and true the lid to fit the opening in the bowl as shown at *right*. You want a snug fit now, as sanding will reduce the diameter slightly.

Hollow the inside of the lid using the **Lid Bottom Pattern** to gauge your progress.

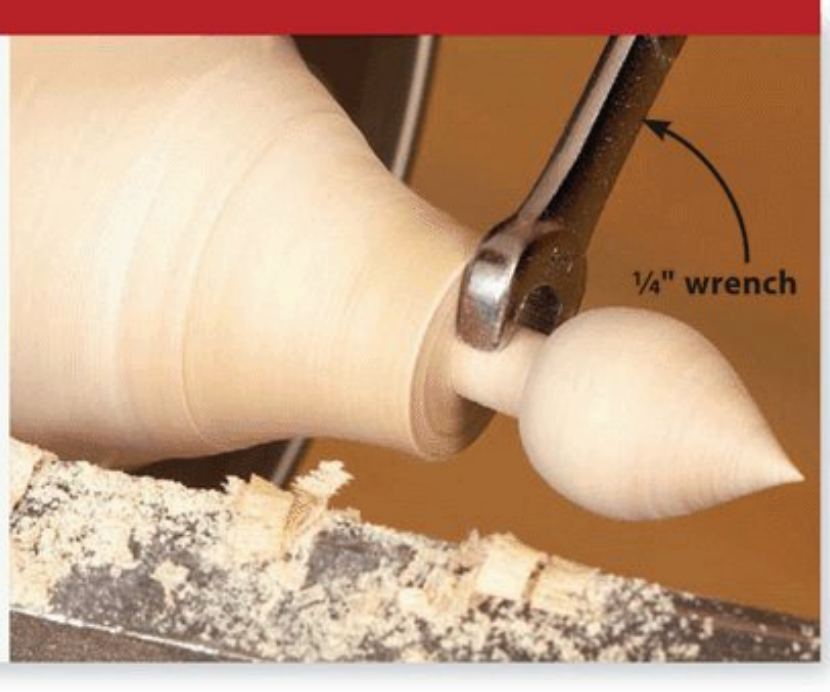




SHOP TIP

A toolbox full of gauges

With open-end wrenches, there's no need for setting and resetting calipers. The wrenches make perfect gauges for checking small diameters. Have ⅝", ⅜", and ¼" wrenches ready for gauging the diameters of the finial. Lightly touch the wrench to the finial. When the wrench slides easily over the workpiece, you've reached the desired diameter.



MORE RESOURCES

FREE VIDEOS

- Learn how to sharpen and use a bowl gouge and get turning tips at: woodmagazine.com/turning-vids

FREE ARTICLES

- Find more turning information at: woodmagazine.com/turninginfo

RELATED ARTICLES

- For more turning ideas go to: woodmagazine.com/turnedprojects $

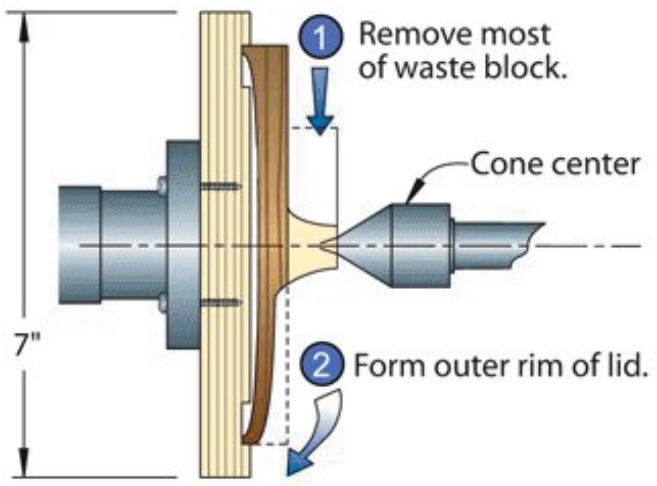
$=Download these articles for a small fee.

www.journal-plaza.net & www.freedowns.net

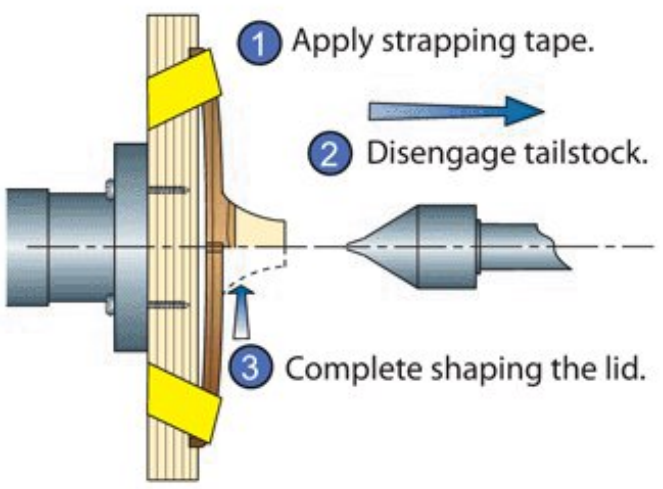
6 Shape the top of the lid

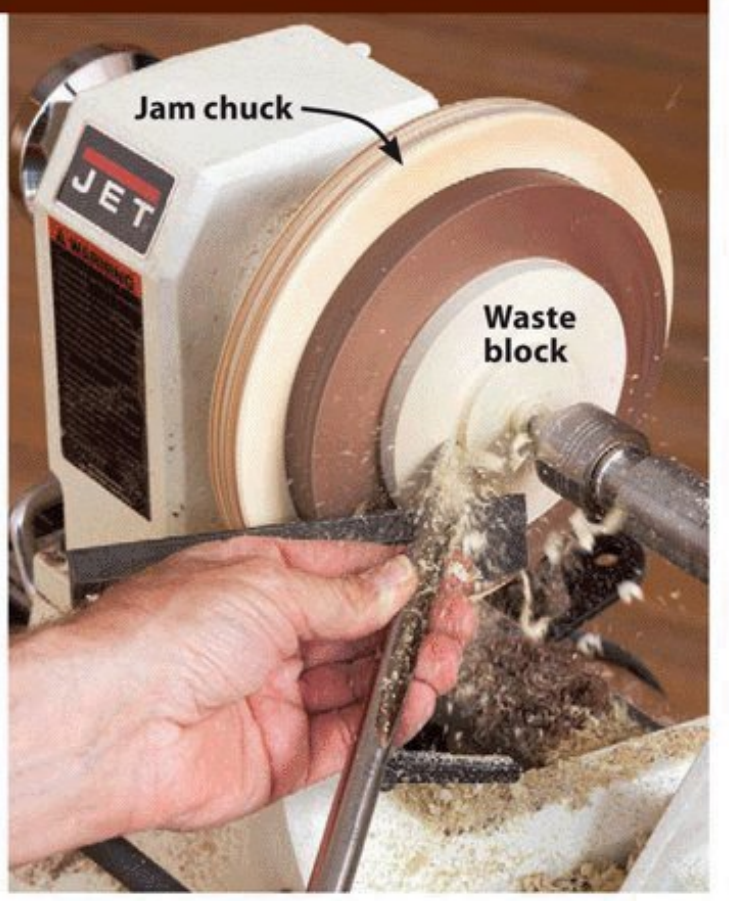
Tool: ⅜" bowl gouge
Speed: 1,000 rpm

Remove the lid from the faceplate and create a 7"-diameter jam chuck as you did for the bowl. Use the cone center and tailstock to hold the lid to the jam chuck as shown at *right*.



Turn away as much of the waste block as possible, then begin shaping the outside of the lid. Use the **Lid Top Pattern** to gauge your progress. Secure the lid with strapping tape, pull the tailstock back, and finish forming the lid. Then sand it to 320 grit. Mark the center of the lid with a pencil to mark the finial location.

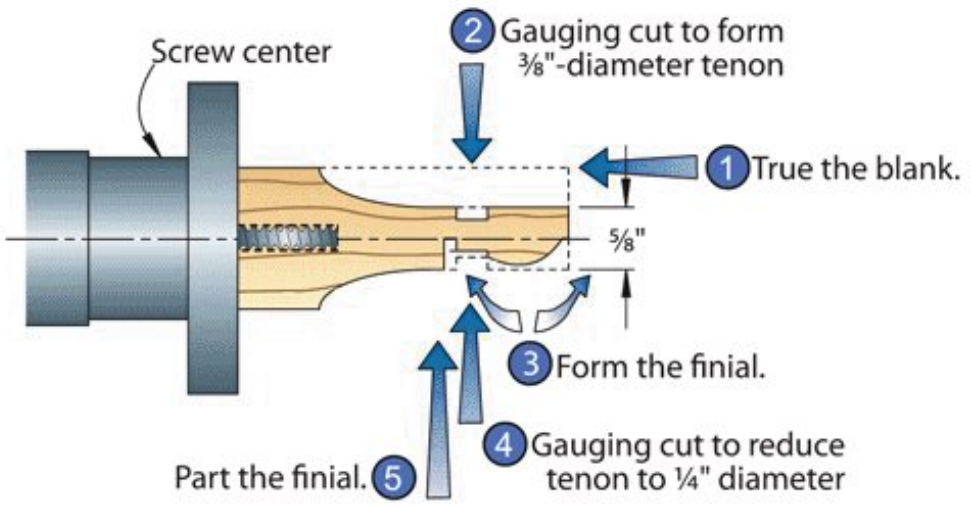




7 Create the finial

Tools: ¼" bowl gouge, ⅛" parting tool
Speed: 1,000–1,200 rpm

Drill a pilot hole centered in one end of a 1×1×3" maple blank and mount it to the screw center. True the outer 2" of the blank to ⅝" in diameter. Place the **Finial Pattern** next to the spinning blank and mark the locations of the ¼" and ⅜" diameters. Turn the tenon to ⅜" diameter, then shape the finial as shown at *right*. Once the finial reaches final shape, sand it to 320 grit. Then reduce the tenon to ¼" in diameter and part it from the blank, leaving a ¼"-long tenon.


Screw center
2 Gauging cut to form ⅜"-diameter tenon
1 True the blank.
⅝"
3 Form the finial.
4 Gauging cut to reduce tenon to ¼" diameter
Part the finial. 5

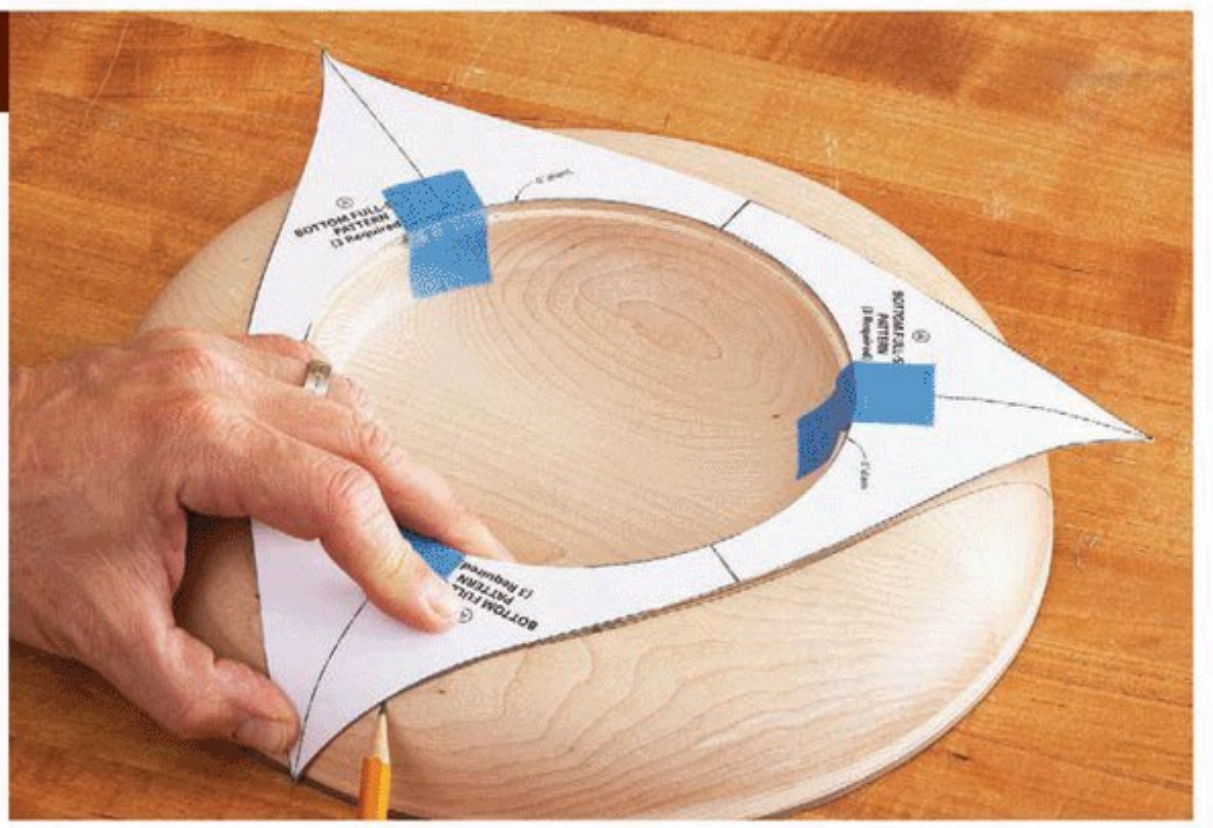
Drill a hole in scrap to test the fit of the tenon. When you're satisfied with the fit, drill a hole in the lid and glue the finial in place.

8 Saw the bowl to shape

Retrieve the **Bowl Profile Pattern**, align the center cutout with the interior of the bowl, and tape it in place, *right*.

Quick Tip! Rotate the pattern to find the placement that keeps the most attractive grain and cuts away flaws. Fold the pattern over the bowl and trace the edges. Remove the pattern, bandsaw close to the lines, then sand the edges smooth to 320 grit.

Apply a finish to all pieces. We sprayed on three coats of aerosol semigloss lacquer, sanding lightly between coats with a 320-grit sanding sponge.



Written by **Craig Ruegsegger** with **Jeff Mertz**
Project design: **Jeff Mertz**
Illustrations: **Roxanne LeMoine**; **Lorna Johnson**

www.journal-plaza.net & www.freedowns.net

Fred Heim does not stand 12' tall. He just builds woodworking projects that are half as large as life.

Fred Heim: Big Toys For Big Boys

How do you follow up a successful career constructing housing developments, shopping centers, and retirement communities? Rather than simply reminiscing, Fred Heim of Marlborough, Massachusetts, recreated the good old days...in half scale. His wooden models of heavy construction equipment are so detailed that, without a nearby size reference, they're indistinguishable from the real thing.

Models: A growing concern

As he prepared to hand over the construction business to his sons, Fred Heim decided to revisit a childhood hobby: model-making. The first models he tackled in "retirement," 1/16-scale wooden trucks, were incredibly detailed, made completely out of wood, and apparently unsatisfactorily diminutive. Looking at those models one idle day in his shop office, he decided it was time to scale things up a bit.

Fred built his first half-scale model, the Peterbilt truck, *above*, out of fiberglass, mahogany, and plywood on an aluminum chassis. And—get this—it *runs*. Powered by a 26-hp diesel tractor engine, the cab just fits Fred's six-foot frame thanks to a removable

PETERBILT 379 WITH HILL DUMP TRAILER

An aluminum frame lends Fred's 26' dump trailer strength while a professionally powder-coated body give its mahogany-plywood sides the convincing look of metal.

CATERPILLAR D8R BULLDOZER

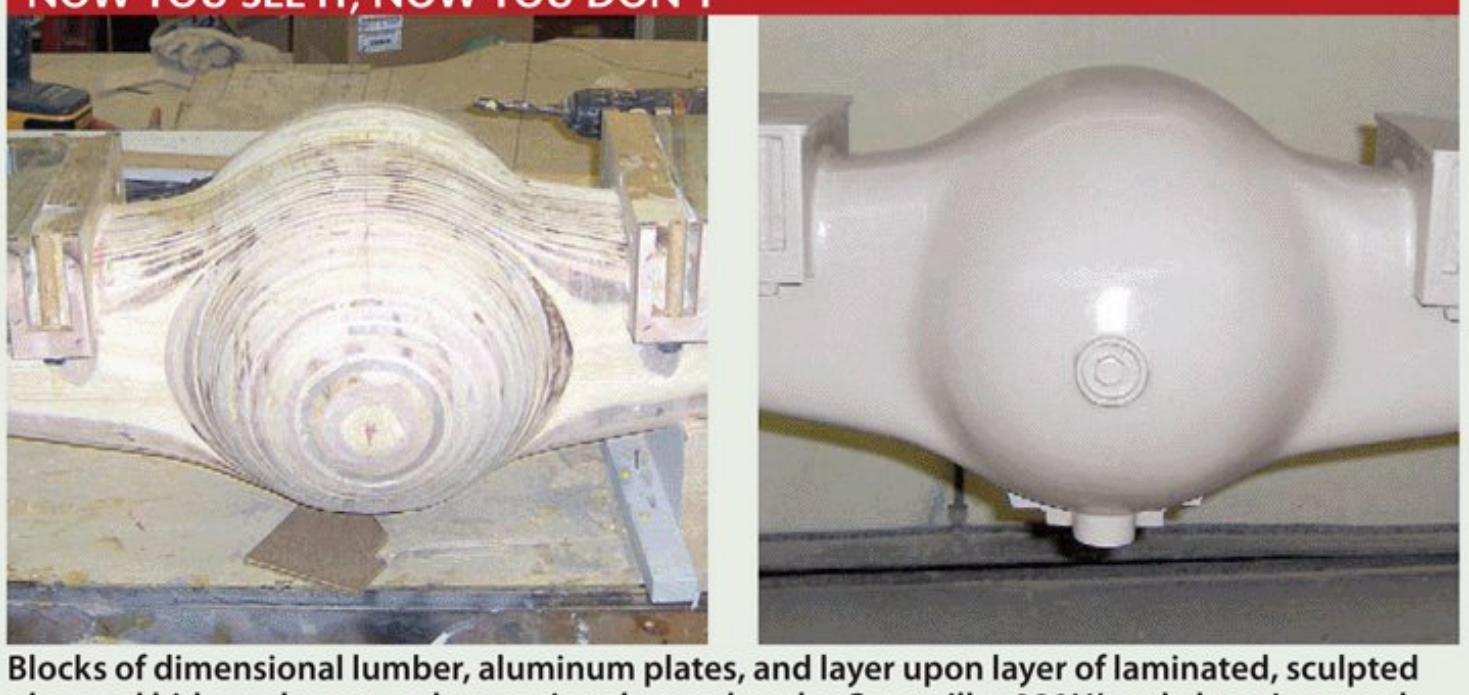
No half-scale construction business can get by without earth-moving equipment, so Fred made this half-size replica Caterpillar D8R dozer. Overlooking no detail, he had decals scaled from the original.

www.journal-plaza.net & www.freedowns.net

Where's the wood?

Even up close, it's hard to be sure that you're not looking at metal. Fortunately, photographic evidence proves the existence of wood underneath the powder-coatings and Caterpillar-yellow paint jobs of Fred's models.

NOW YOU SEE IT, NOW YOU DON'T



Blocks of dimensional lumber, aluminum plates, and layer upon layer of laminated, sculpted plywood hide under a powder-coating that makes the Caterpillar 980H's axle housing nearly indistinguishable from its full-sized cast counterpart.

A SMOOTH CHANGE TO METAL

Fred smoothes auto-body filler over marine-grade mahogany plywood, disguising seams and nail holes.

steering wheel. The truck features working lights, 12" trailer wheels riding on golf-cart axles, an air-bag suspension system, hydraulic brakes, and a high-gloss automotive paint job. The fittings, mechanisms, latches, and trim had to be hand-made to fit or repurposed from smaller cousins of the real thing.

The natural first question everyone asks Fred is: Why? "I just have to keep going or I'd die. And I want to do something that no one else has done, something that makes people excited."

Even at half scale, the truck weighs more than a ton and measures 22' in length. Fortunately, Fred's three-story shop is spacious, because Fred's next project was a 26' dump trailer. Its sides looks so much like metal that you can't resist knocking on the side just to be sure Fred's not pulling off some huge prank. Sure enough. Sounds like wood. Fred just smiles. "That's the first thing everyone does," he says in a thick New England accent.

Fred took his massive models on the road to truck shows (both for real trucks and models), drawing amazed—and often confused—stares from drivers as he pulled the rig down the highway, and huge, curious crowds at the shows. "I couldn't stop at any gas station or rest stop for less than an hour. Every time I stopped, I'd have every trucker there asking me questions about it."

His construction connections gained him access to a nearby heavy-equipment dealer, so next up was a half-scale Caterpillar D8R bulldozer, along with a drop-bed trailer for it to ride on. He followed that up with a Caterpillar 345C L excavator, *below left*.

Although they are static (unpowered) models, both the bulldozer and the excavator feature rotating aluminum axles along with buckets, booms, and pistons constructed so realistically that the models can move just like the real things. Fred handmade each link in the fully articulated tracks (88 for the dozer and 104 for the excavator) out of mahogany, solid-surface material, and PVC.

Fred's *pièce de résistance*, however, is his latest half-scale model, a powered Caterpillar 980H wheel loader, *below*. Large remote-controller box strapped around his neck, Fred steers the dirt mover around the basement-turned-parking-lot of his shop. He raises, lowers, and rotates the bucket, demonstrating that his "toy" can do anything the big boys can. See Fred's models in motion at woodmagazine.com/fredheim.

Fred claims that the 980H completes the set. "I keep saying this one's my last half-scale, and I keep doing something. It's a sickness." Never one to sit still, Fred began work on a vehicle of a different kind. And it's definitely not a model.

CATERPILLAR 345C L EXCAVATOR ON DROP TRAILER

Each link in the 345C L excavator's tread contains nine pieces of mahogany or PVC. Both of the fully-articulated, working treads have 52 links. That adds up to 936 pieces of half-scale detail.

CATERPILLAR 980H WHEEL LOADER

Fred drives his half-scale Caterpillar 980H wheel loader by remote control around the basement level of his shop. The hydraulics give the arms and bucket the full range of motion of the real thing.

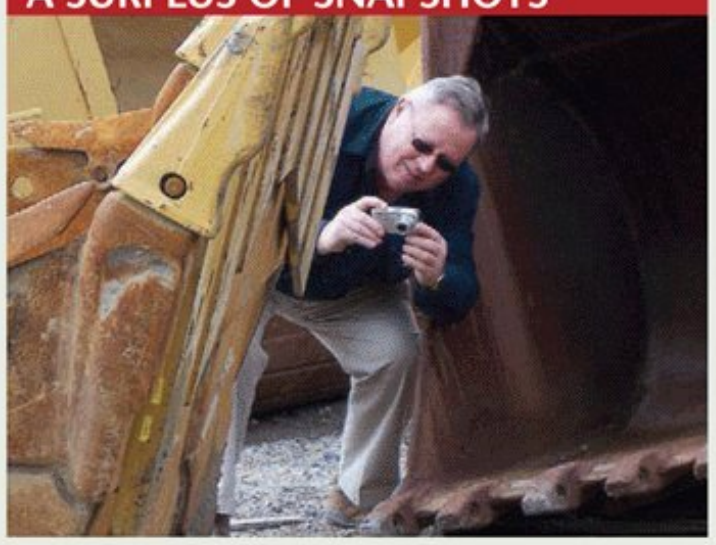
www.journal-plaza.net & www.freedowns.net

Scaling Projects from Photos and Illustrations

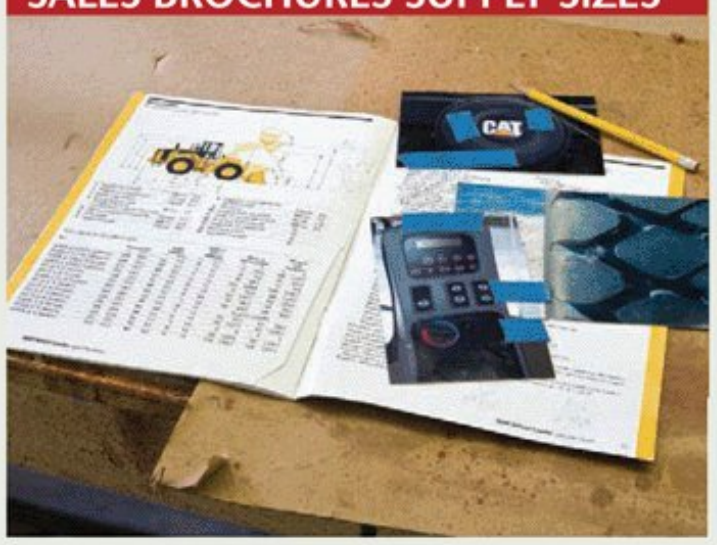
Fred took hundreds of reference photos and measurements for each model. Diagrams from manufacturers' brochures provided precise dimensions. Toy replicas served as both inspiration and confirmation as the projects progressed. Like Fred, you can reproduce or scale projects from photos by following these tips:

- Take photos from all sides as straight-on as possible.
- If you're unable to take measurements directly, include a tape measure in the photos for scale.
- Lacking that, find a benchmark object in the photo, estimate its size, and use this measurement to produce a ratio for scaling the remaining dimensions.
- Take close-up detail shots of joinery, moldings, carvings and trim pieces.

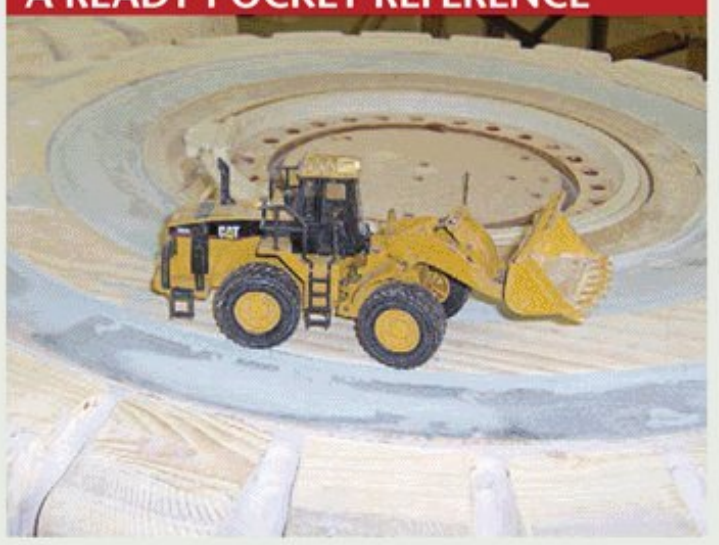
A SURPLUS OF SNAPSHOTS



SALES BROCHURES SUPPLY SIZES



A READY POCKET REFERENCE



Fred goes full-scale with his latest project

Between building malls and models, Fred continued building full-scale boats, a hobby he started fresh out of school.

During the build, the Rachel H.—a mahogany craft with gleaming stainless steel trim—dominated the ground-level, second floor of Fred's 3-story shop. It's one of dozens that he's built over the past few decades. But this one holds special significance: It's a 50th-anniversary gift to the boat's namesake, Fred's wife. He chose the design, a 31' wooden fantail launch based on early 1900s runabouts, specifically for slowly cruising the Charles River, one of Rachel's favorite getaways. "Obviously, I have a very understanding wife of 50 years." Fred says. "After the half-scale models, I thought that she deserved this."

The boat features all the amenities to pamper up to 13 passengers: a fully equipped head (bathroom), ample refrigerator space for beverages, plush upholstery, and a surrey canopy with all-weather curtains to protect passengers from bad weather.

After a round of boat shows in early 2009, the Rachel H. settled into her berth at the Watertown Yacht Club for a life of leisurely river cruising. Of course for Fred, leisure is all business. His next project—what else?—building model boats, this time in 1/12-scale.

FROM HERE, HE SCALES UP!

The Rachel H. started as—what else?—a model. Points were pulled from the stripes and scaled up to make full-sized rib patterns

THE CAPTAIN BUILDS HIS SHIP

The Rachel H.'s hull consists of two layers of overlapping mahogany planks attached with stainless steel staples. A coating of epoxy inside, in-between, and outside the planks ensures a watertight hull.

PREPARING FOR HER MAIDEN VOYAGE

Nearly completed, the Rachel H. awaits a few final details. The flat-bottomed-hull design limits the boat's speed to about seven knots, perfect for leisurely river cruises.

www.journal-plaza.net & www.freedowns.net

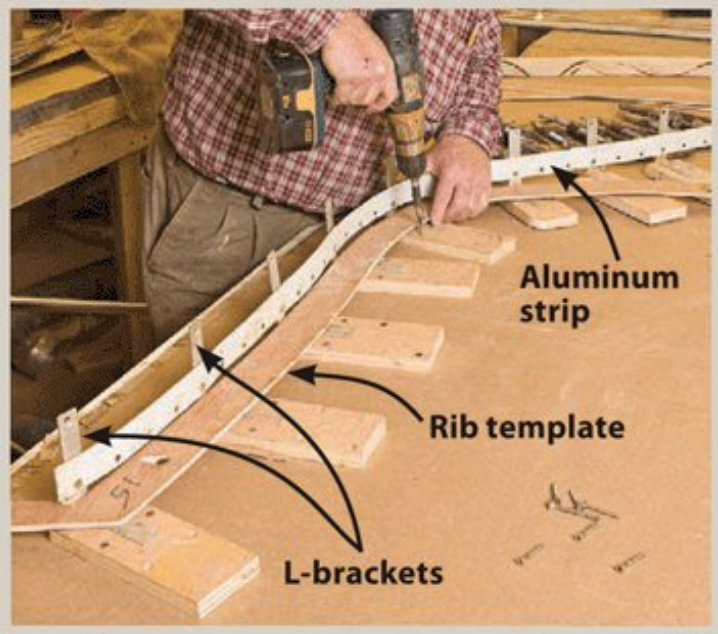
3 Techniques for Crafting Colossal Curves

The complex curved hull of a boat requires precisely mating joinery—and lots of it—to keep her from visiting Davy Jones' locker. Here are three ways that Fred uses small jigs to break down the large task:

1. Laminating strips into curved parts

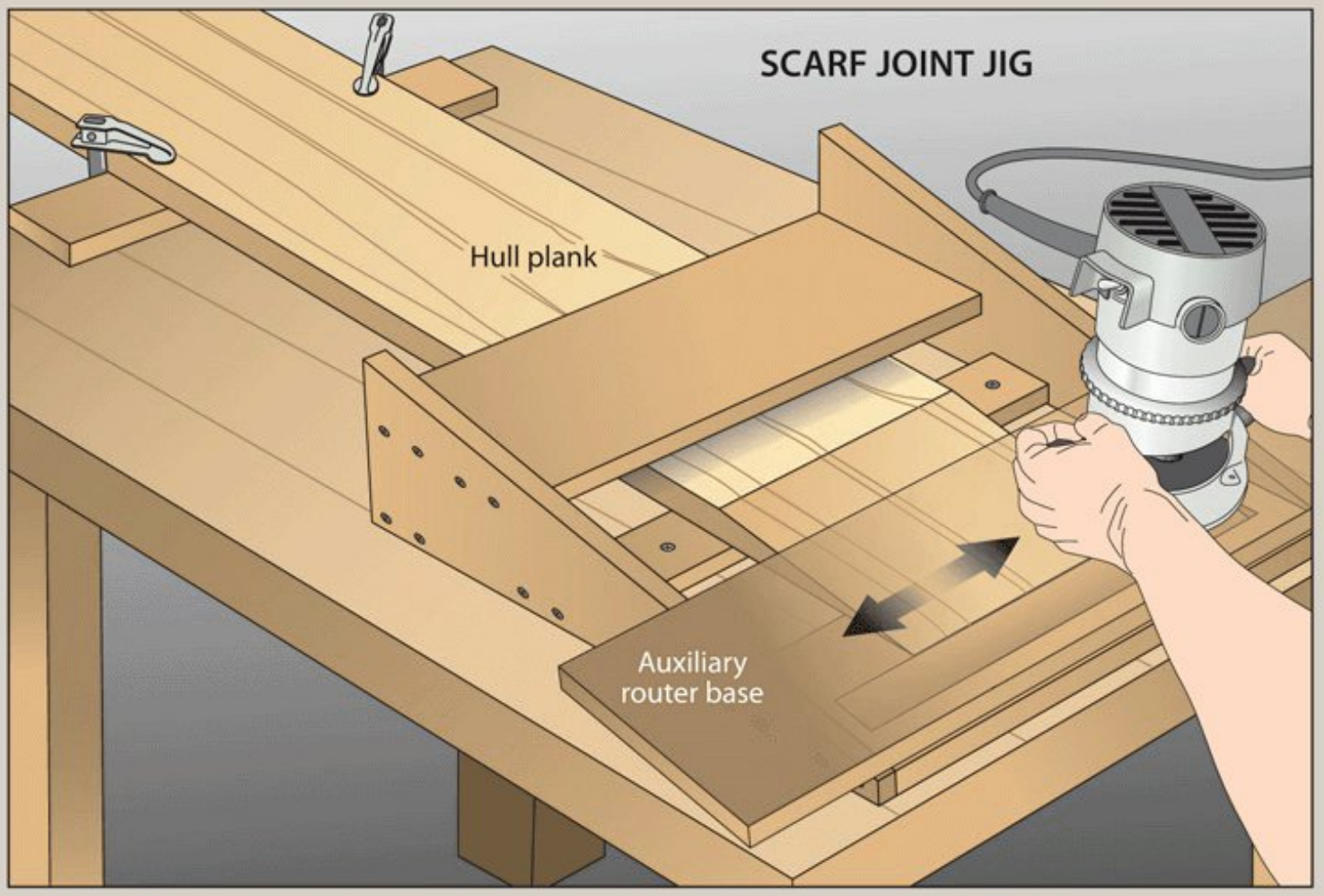
Home-center, steel L-brackets screwed to plywood scraps form a base to hold a flexible aluminum strip. Fred forms the reusable, shop-made "spline-and-duck" mold around a full-sized, plywood template of one of the boat's ribs and secures the bases to a work surface (*near photo*). Epoxy-coated strips of oak are pressed into the curve and clamped to the spline with C-clamps (*far right*).

To watch a free video on using a spline and ducks to lay out irregular curves go to woodmagazine.com/duckvid.



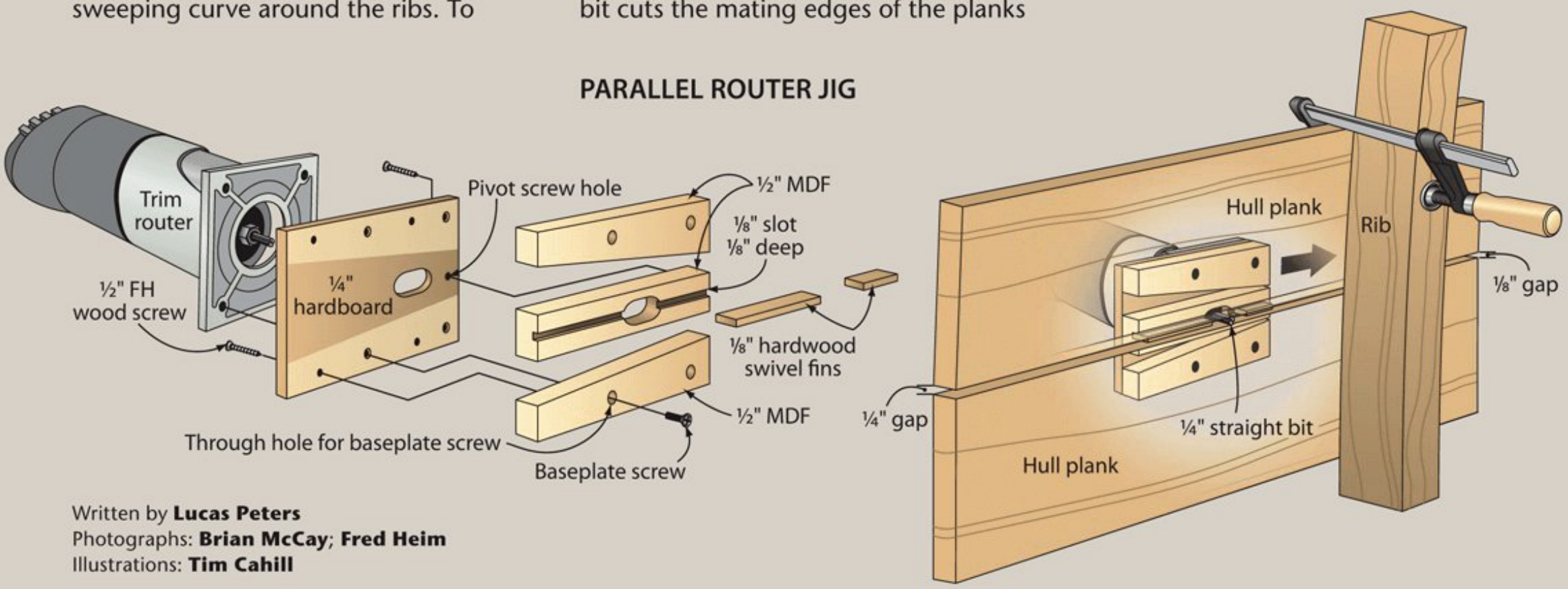
2. End-to-end joints

With the boat's frame complete, it's time to add the planks. The length of the boat necessitates multiple lengths of mahogany. Joining wood end-to-end under tension requires a long, tapered joint, called a scarf joint, overlapping between the ribs to maintain the continuous curve. Fred crafts a scarf joint using this simple router jig. The slanted base defines the 10° angle of the joint, while the extra-long auxiliary router subbase slides back-and-forth to nibble away the waste with a straight bit in successively deeper passes.



3. Jointing curves for a seamless fit

After one plank is attached to the ribs, the next plank is clamped above the previous leaving a ⅛–3⁄16" gap. The two planks must fit together seamlessly in a sweeping curve around the ribs. To accomplish this, Fred uses a trim router equipped with a ¼" straight bit and this shop-made auxiliary subbase. The swivel fins on the subbase slide in the gap between the planks while the ¼" straight bit cuts the mating edges of the planks parallel to each other. The process can be repeated to fine-tune the fit by sliding the upper plank down slightly and making a second pass.



Written by **Lucas Peters**
Photographs: **Brian McCay**; **Fred Heim**
Illustrations: **Tim Cahill**

www.journal-plaza.net & www.freedowns.net

Media Cabinet

Gracious and spacious, this case holds your entire music and video library.

Dimensions: 29¾" wide × 19¼" deep × 34¾" high

www.journal-plaza.net & www.freedowns.net

PROJECT HIGHLIGHTS

- Lots of storage in a compact footprint: Sixteen drawers hold up to 576 CDs or 256 DVDs.
- Plywood makes quick work of carcase construction.
- Cut simple drawer joints on the tablesaw using just a dado blade.

Finally! Here's a handsome cabinet that brings order to the chaos and clutter of extensive CD and DVD collections. Like on an old-fashioned library card catalog, labeled drawer pulls help you find any title in an instant. And don't sweat the drawers: You'll learn how to get a perfect fit for each one before you even start building them.

First, measure carefully for identical drawer openings

1 In the **Materials List** and **Drawing 1**, we show the length of the top and bottom (A) and shelves (B) as 27¼". But you'll need to adjust this dimension to account for the actual thickness of your plywood. Determine the true length by adding the thickness of three pieces of plywood to 25" (the combined width of the drawer openings plus ½" for the rabbets in the sides [D]) [**Photo A**]. Using this dimension, cut the top, bottom, and shelves to size from ¾" birch plywood.

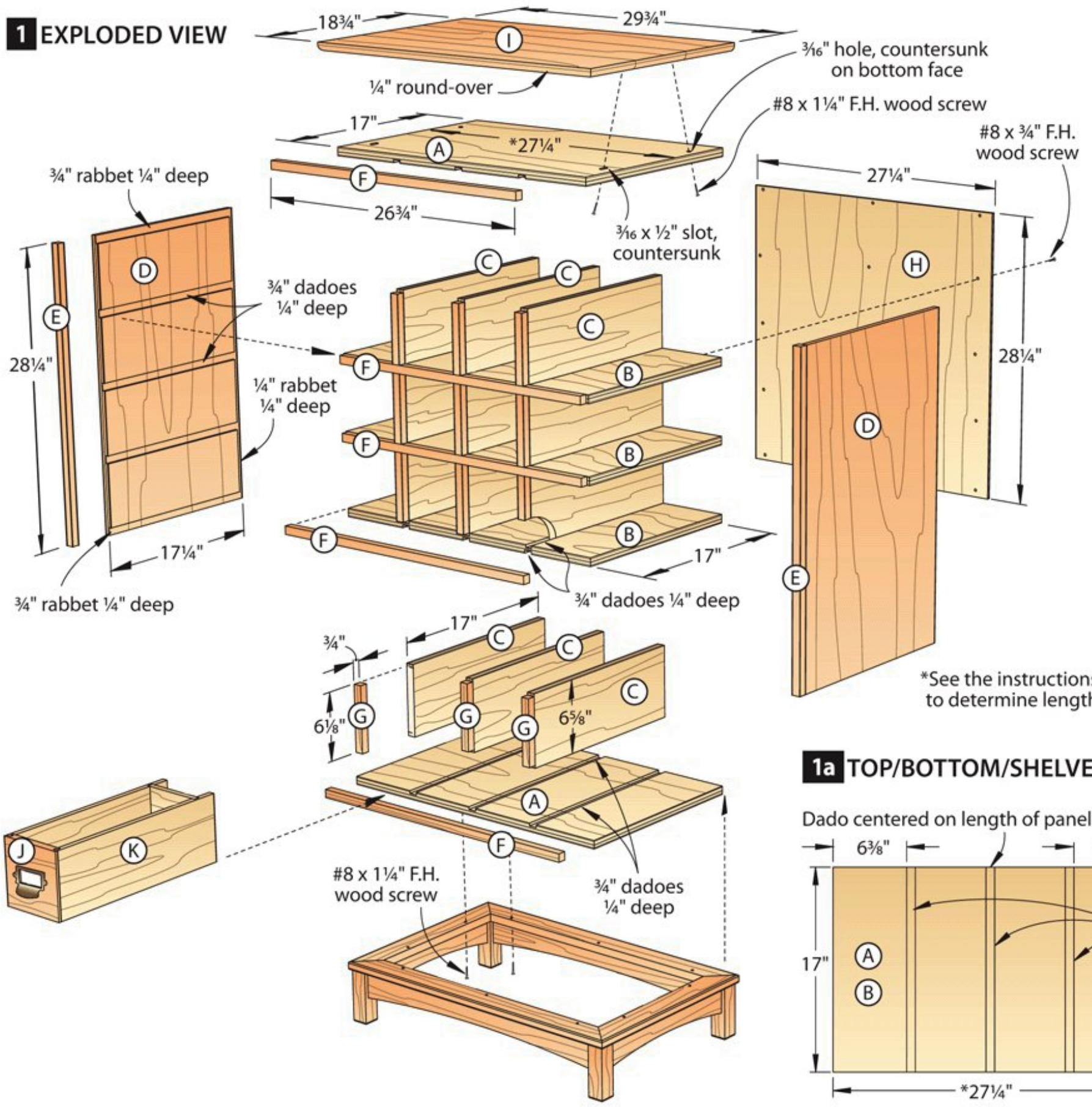
2 Set up a dado blade in your tablesaw to match the thickness of the dividers (C) and make a ¼"-deep cut in scrap to check the fit and depth of the dado. Attach a long extension to your miter gauge to steady the plywood panels and set the rip fence 6⅜" from the blade. Cut dadoes across the inside faces of the top and bottom (A) and both faces of the shelves (B) [**Drawing 1a**].

3 Reset the fence to center a dado on the length of these parts. ***Quick Tip! Make your mark to eliminate error.*** To ensure the center dadoes align even if the fence is slightly off, mark one end of the top and bottom (A) and each shelf (B). Run the marked end against the rip fence when cutting the dadoes.

WHEN DOES ¾" NOT EQUAL ¾"?

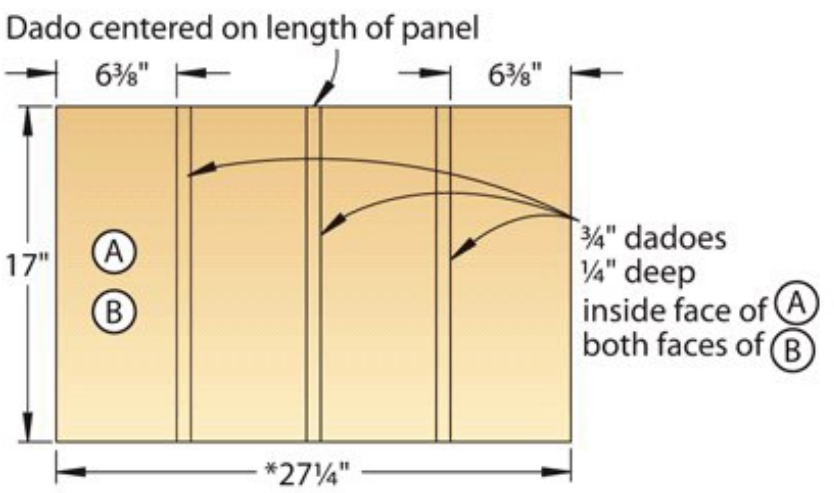
Plywood thicknesses vary. For spot-on accuracy, take measurements that include the actual stock used in the project.

1 EXPLODED VIEW



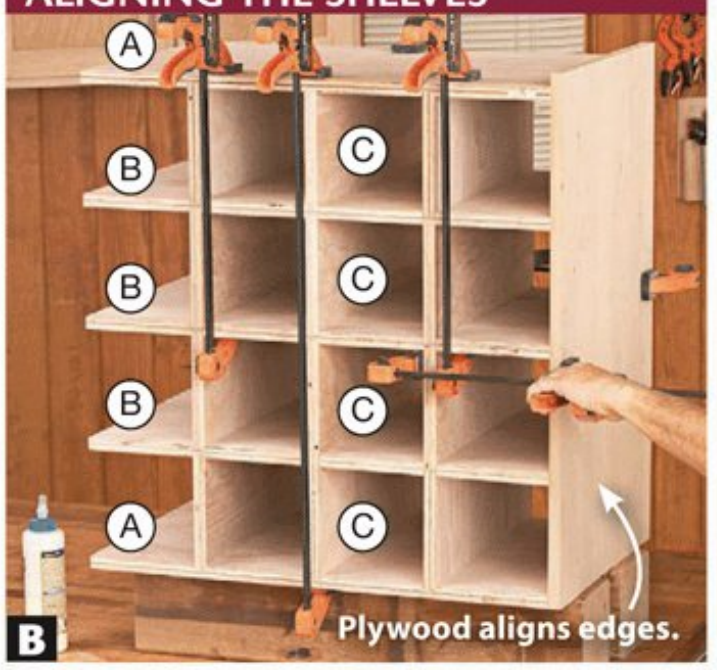
*See the instructions to determine length.

1a TOP/BOTTOM/SHELVES



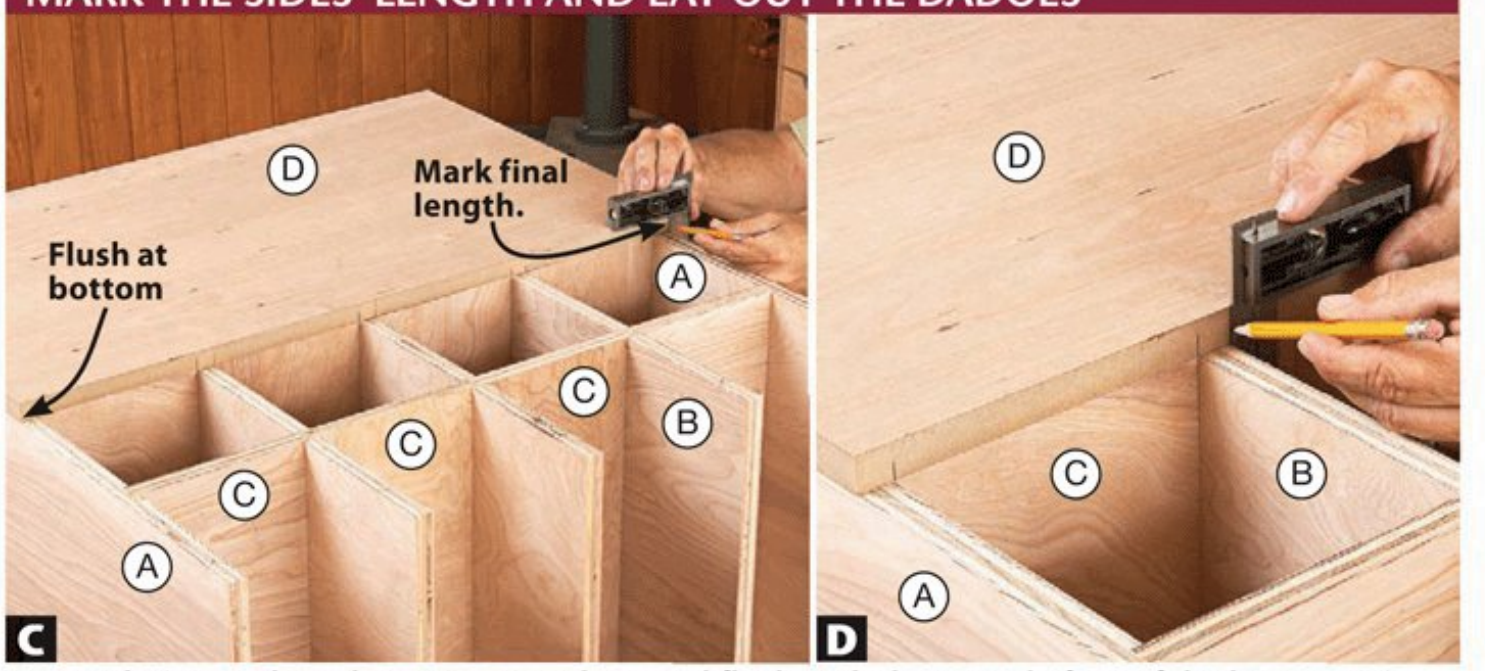
www.journal-plaza.net & www.freedowns.net

ALIGNING THE SHELVES



Temporarily clamp a piece of plywood to the cabinet to align the shelves (B) and top and bottom (A) and to keep the assembly square.

MARK THE SIDES' LENGTH AND LAY OUT THE DADOES



Set a side (D) on the cabinet (A–C) with its end flush with the outside face of the bottom (A), *above*. Mark the side's length at the top. Then, using a square and a pencil, mark on the side the locations of the dadoes for the shelves (B), *above right*.

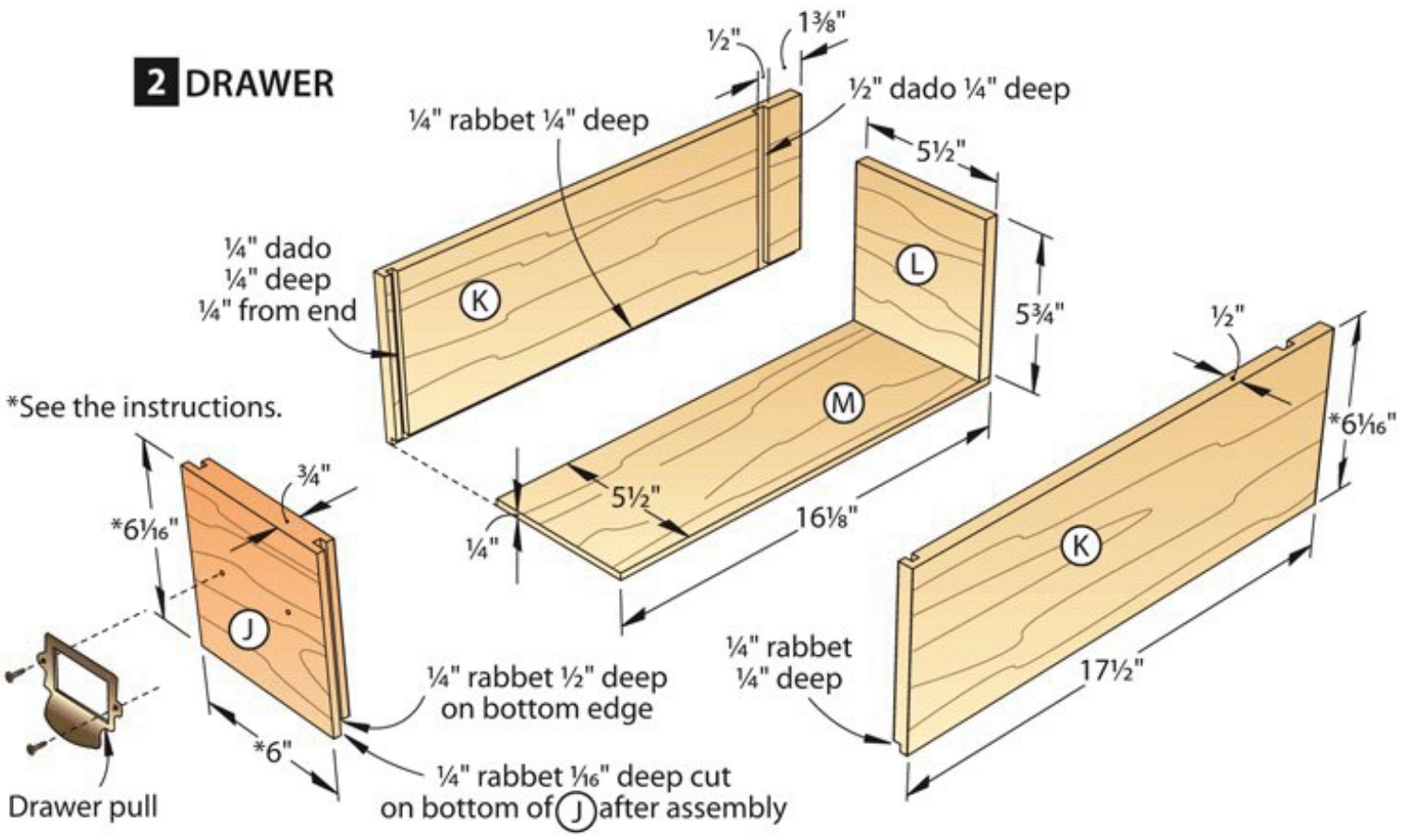
4 Cut the dividers (C) to size. Sand the top and bottom (A), shelves (B), and dividers to 150 grit. Glue three dividers into the dadoes in the bottom and clamp a shelf to this assembly. ***Note:*** *Make sure the marked end of each panel is on the same side.* Repeat this procedure, working your way up one level at at a time. ***Quick Tip!*** ***Short clamps work big.*** Make use of shorter clamps by running them from a shelf to the top or bottom [**Photo B**].

5 Cut the sides (D) to width and rough length. Lay the cabinet (A–C) on your bench and rest a side on it [**Photo C**]. Mark the sides' final length and the locations of the dadoes [**Photo D**]. Using these marks, trim the sides to length, then cut the dadoes. Rabbet each end and the back edges of the sides [**Drawing 1**], sand them to 220 grit, and glue the sides to the cabinet. Check the assembly for square.

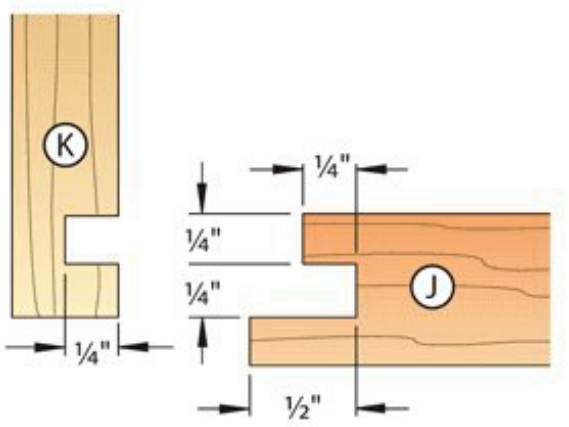
6 Rip the side, shelf, and divider trim (E, F, G) to width and crosscut the side and shelf trim slightly overlength. Cut 26"-long blanks for the divider trim (G). Plane the side trim (E) to match the thickness of the sides (D). Cut it to match the height of the sides, and glue and clamp it in place [**Photo E**]. Plane the remaining trim to match the shelf (B) and divider (C) thickness. Crosscut the shelf trim (F) to fit between the side trim and glue and clamp one piece to the bottom (A). Cut a length of divider trim from each blank to fit between the shelf trim and the lower shelf, and glue them in place. Repeat this process, working your way up the cabinet, applying trim to the remaining shelves and dividers [**Photo F**].

7 Cut the back (H) to size and set it aside for now. Glue up boards for the

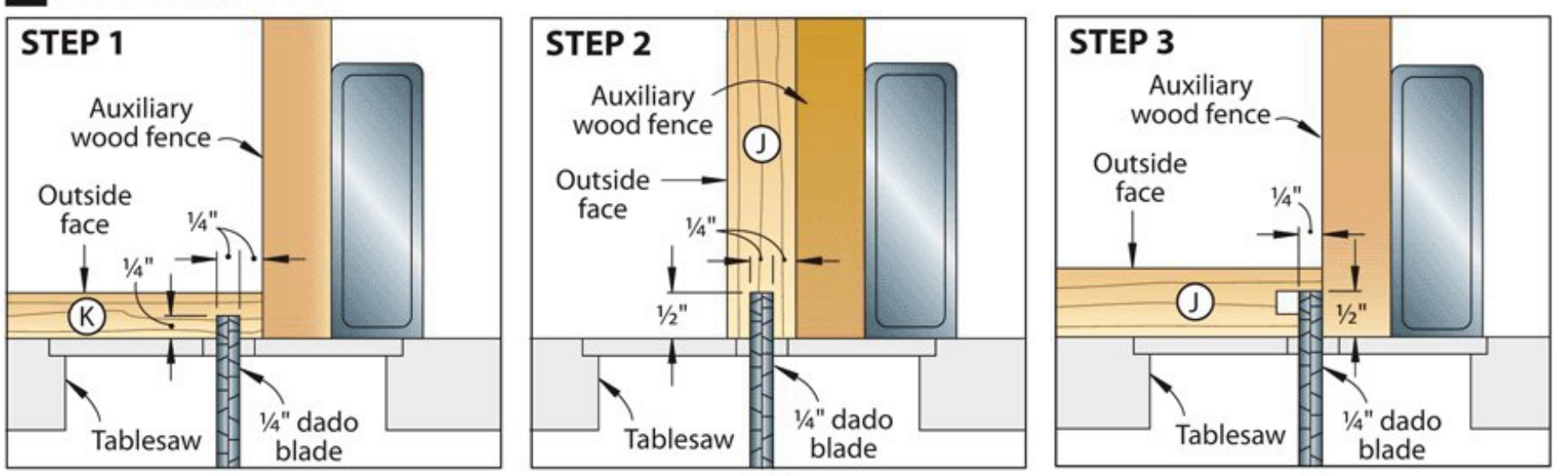
2 DRAWER



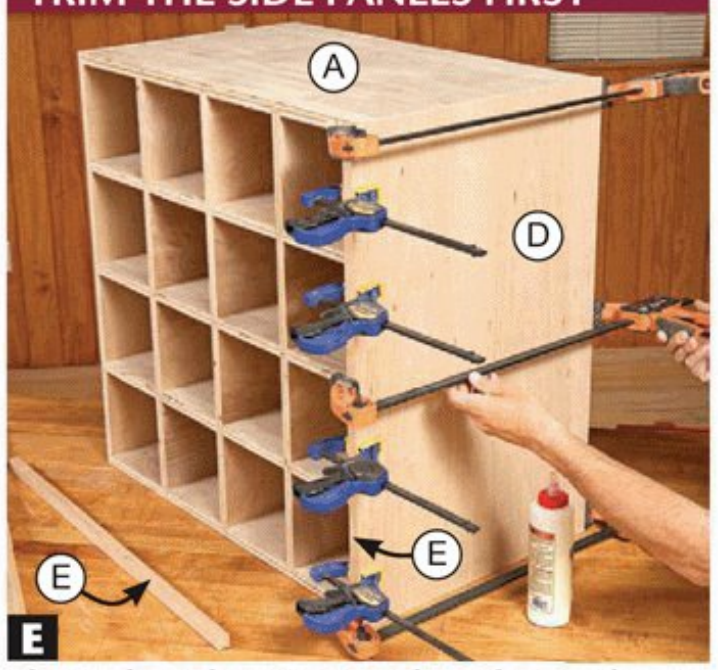
2a DRAWER JOINT



3 DRAWER JOINERY



www.journal-plaza.net & www.freedowns.net



Clamp the side trim (E) to the side (D). Clamps across the joint line keep the trim and side flush on both faces.

For a seamless fit, glue the trim (F, G) in place working from the bottom up, cutting the trim to length as you go.

top panel (I), cut it to size, and rout a ¼" round-over around the lower edge. (Save the router-table setup for later use.) Sand the top to 220 grit and set it aside.

You make 16 drawers, what do you get?

Note: *To cut the drawer joinery as shown [**Drawing 2a**], the drawer fronts (J) must be exactly ¾" thick, and the sides (K) must be exactly ½" thick. Cut some extra pieces for testing setups as you cut the joinery.*

1 For a continuous grain pattern across the drawer fronts (J) in each row, choose boards with enough clear grain to yield four drawer fronts next to each other. The length of each drawer front is ⅛" less than the width of a drawer opening. The width of the drawer fronts is 1/16" less than the opening's height. Cut them to size, then label each set of four so you can re-create the grain flow [**Shop Tip,** *above right*]. From ½" stock, cut the drawer sides (K) to size [**Drawing 2**].

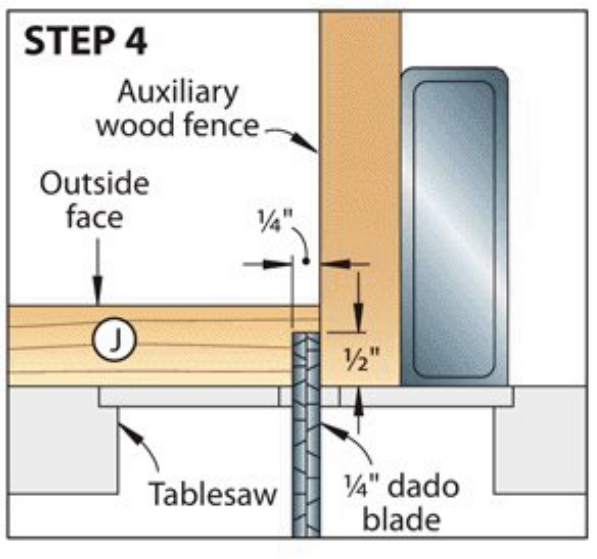
2 Attach an auxiliary fence to your tablesaw's rip fence and set up a ¼" dado blade [**Drawing 3**]. Cut a dado across the front end of each drawer side (K) [**Step 1**]. Raise the blade to ½" and cut a groove in each end of the fronts (J) [**Step 2**]. Reposition the rip fence [**Step 3**] and make a pass along the ends of each front with the outside face up. With the same setup, cut a rabbet along the bottom edge of the fronts [**Step 4**]. Lower the blade to ¼" and rabbet the bottom inside edge of the sides [**Step 5**]. Add chippers and shims so the dado-blade width matches the thickness of the backs (L). Cut the ¼"-deep dadoes toward the rear of the sides [**Drawing 2**].

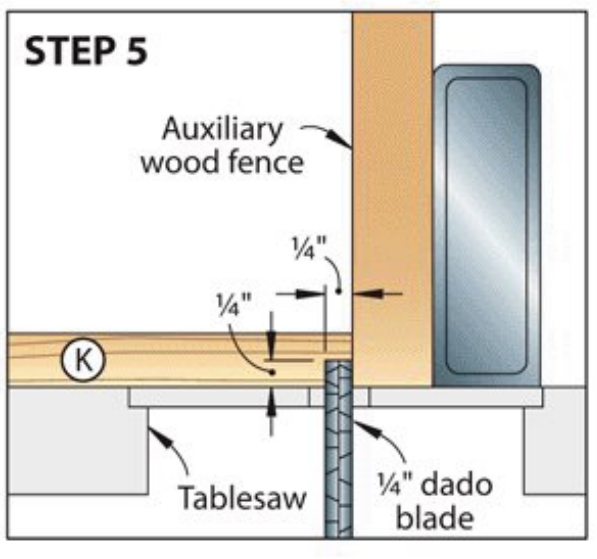
3 Measure the length of the inside face of a drawer front (J). Rip the drawer backs (L) to width and crosscut them to this length [**Drawing 2**]. Cut the drawer bottoms (M) to size. Sand the inside faces of the drawer pieces to 220 grit; then glue up the drawers, checking each of them for square and twist.

4 After the glue dries, create a shadow line below each drawer [**Photo G**]. Write the drawer number on the back face of the back (L) and remove the tape from the drawer front (J). Sand the outsides of the drawers to 220 grit.

Build a base

1 From 8/4 stock (or laminated ¾" stock), cut two 1½×1½×11" blanks for the legs (N). Lay out the mortises at each end on two adjacent faces [**Drawing 4**].

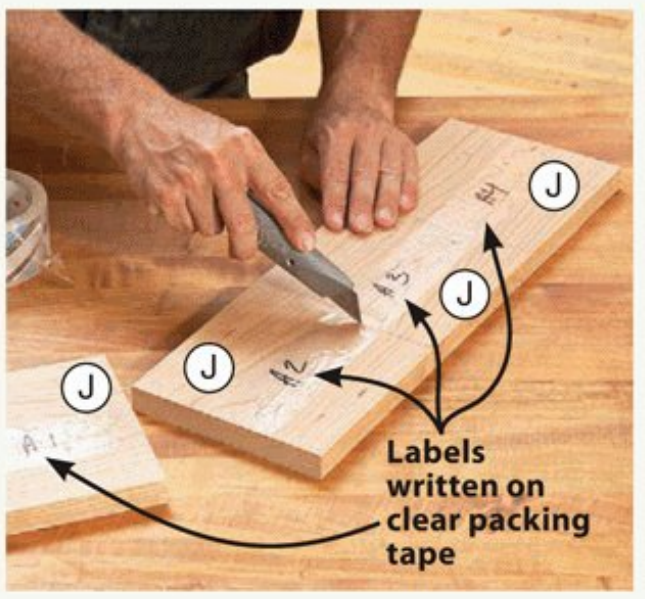




SHOP TIP

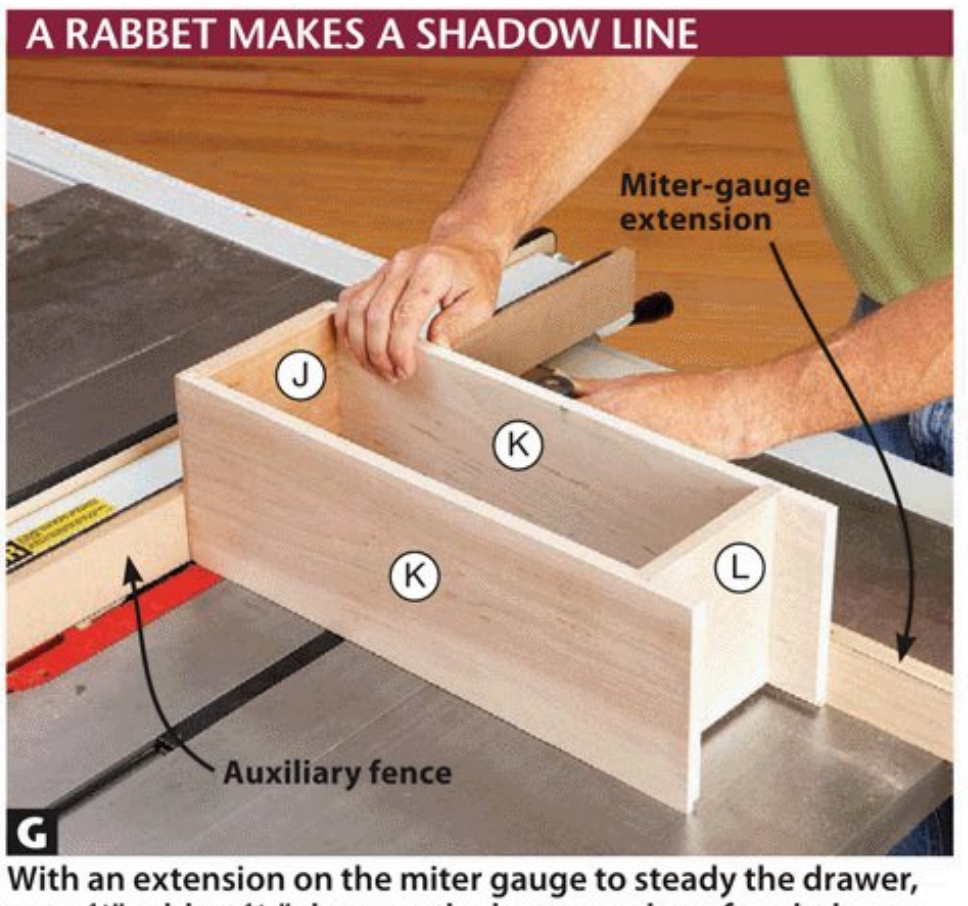
Clearly better labels

When exposed to light for even a short time, cherry begins to darken. Using opaque tape for labels could leave a telltale light spot. Instead, label the drawer fronts (J) on clear packing tape. It allows light through so the entire piece ages evenly. Line up the drawer fronts, stretch a piece of tape across them, then cut them apart after labeling. But even clear tape and ink block some light. So don't leave the tape on longer than necessary.



Drill out most of the waste at the drill press [**Photo H**], then clean up the walls with a chisel [**Photo I**]. Crosscut two 5"-long legs from each blank. Rout ¼" round-overs around the bottom edge of each leg and sand the legs to 220 grit.

2 Cut the rails (O, P) to size [**Drawing 5**] along with a piece of scrap the same width and thickness for testing tablesaw setups. To make the tenons, first cut ½" rabbets on each face on one end of the



With an extension on the miter gauge to steady the drawer, cut a ¼" rabbet 1/16" deep on the bottom edge of each drawer front (J) to create a shadow line.

www.journal-plaza.net & www.freedowns.net

scrap [**Drawing 5a, Photo J**], then test the fit in a mortise [**Photo K**]. If needed, cut off the test tenon, adjust the blade height, and cut another tenon to get a snug fit. When the tenon fits, repeat this process on both ends of the rails.

3 Raise the blade to ¼" above the table, stand each rail (O, P) on edge, and cut the short shoulders to complete the tenons [**Drawing 5a**].

4 Use a fairing stick to lay out the curve on each rail (O, P) [**Drawing 5**]. Bandsaw close to the line, then sand up to it. ***Quick Tip! Shape two pieces at once.*** Use double-faced tape to fasten the front rail to the back rail and the side rails to each other before cutting and sanding the curves. Sand them to 220 grit, then glue and clamp the rails and legs (N) together [**Photo L**].

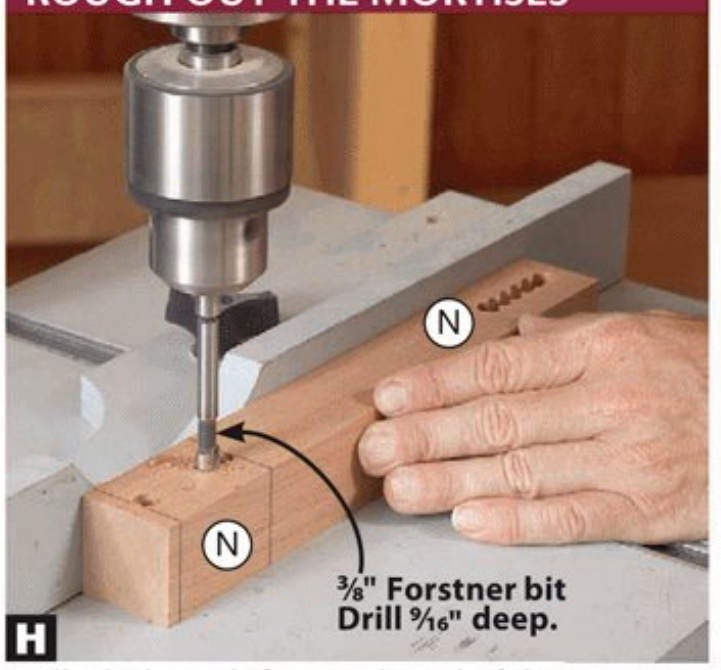
5 Cut the base trim (Q, R) to size and 1" longer than listed. Rout ¼" round-overs on the outside edges [**Drawing 5**]. Then miter-cut each end. ***Quick Tip! Perfectly matched mates.*** Double-faced-tape two matching trim pieces together face-to-face before you miter-cut them to length. Glue up the base trim [**Photo M**]. After the glue dries, sand the trim (Q/R) to 220 grit. Then glue and clamp it to the base (N–P) centered side-to-side and front-to-back.

Bring it all together

1 Apply a finish to all pieces. (We used three coats of boiled linseed oil.) Install the back (H), and screw a drawer pull to each drawer front (J). (See the Quick and Easy Jig on *page 18*.)

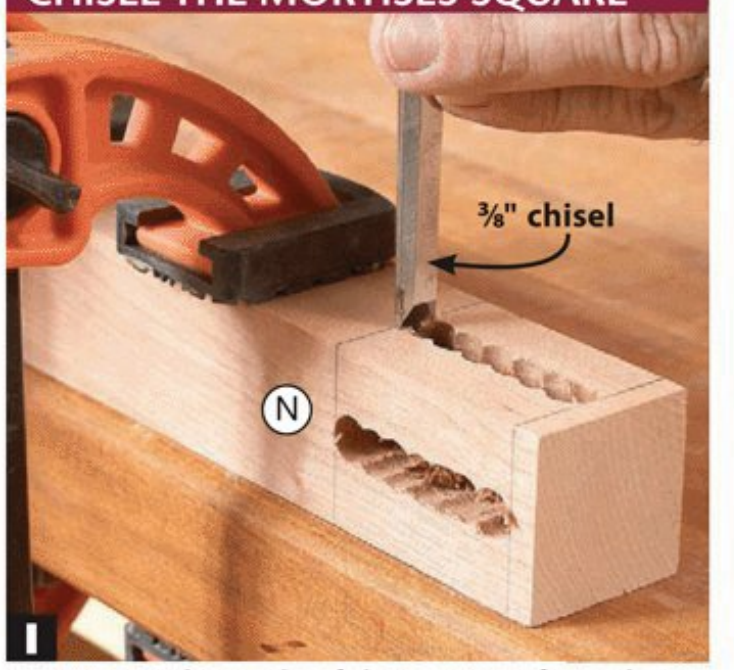
2 Turn the case (A–H) upside down and center the trim (Q/R) on it. Drill 9/64" pilot holes through the trim and into the case bottom (A). Screw the trim to the bottom [**Drawing 1**]. Flip the case over on its legs (N). Reaching into the end drawer openings, drill and countersink 3/16" holes at the rear of the top (A). Drill 3/16 × ½" slots toward the front [**Drawing 1**]. Retrieve the top panel (I) and screw it to the top (A) centered side-to-side and flush at the back. After printing cards for the drawer pulls, pop some popcorn, and cue up your favorite movie. It will be easy to find.

ROUGH OUT THE MORTISES



Drill a hole to define each end of the mortise, then bore overlapping holes to remove most of the waste between them.

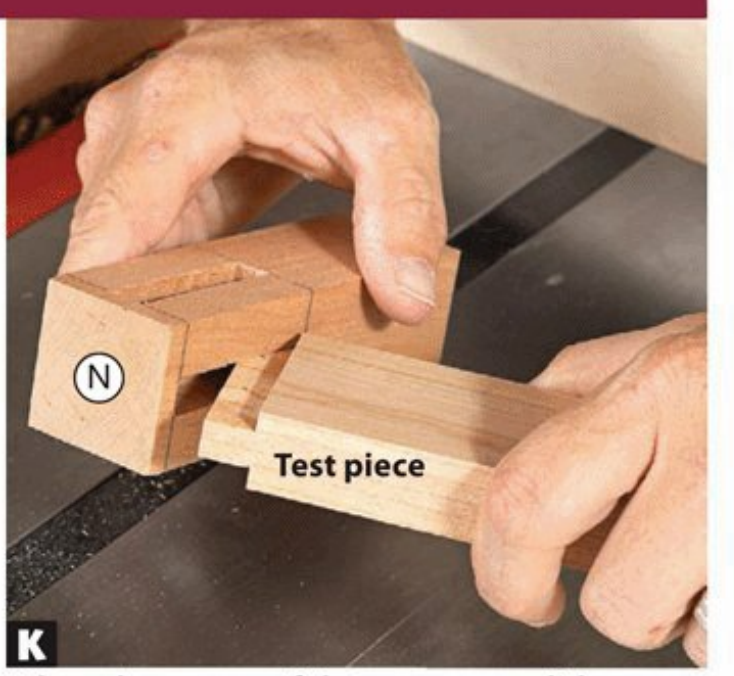
CHISEL THE MORTISES SQUARE



Square up the ends of the mortise first, then switch to your widest chisel to remove the ridges from the sides.

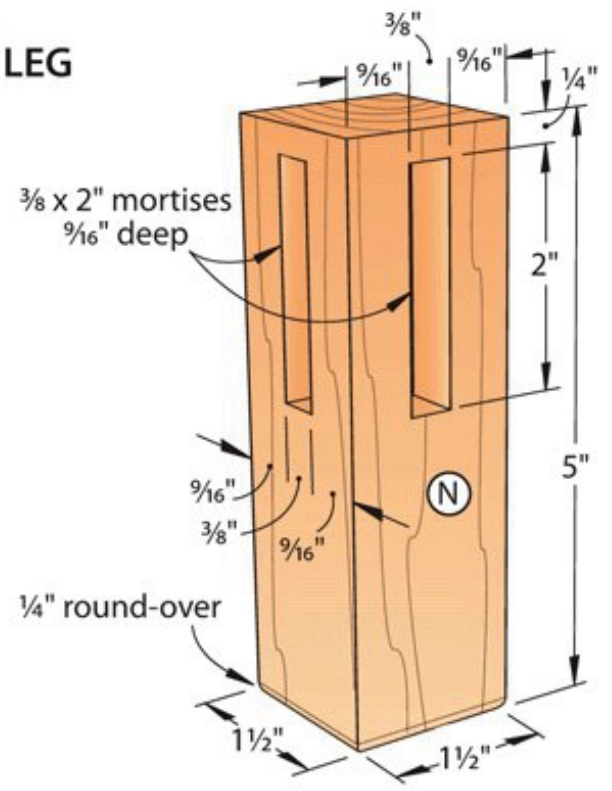
TEST SETUPS ON SCRAP FIRST

House a 9/16"-wide dado blade in an auxiliary fence and raise the blade 3/16" above the table. Cut rabbets on each face of a test piece.

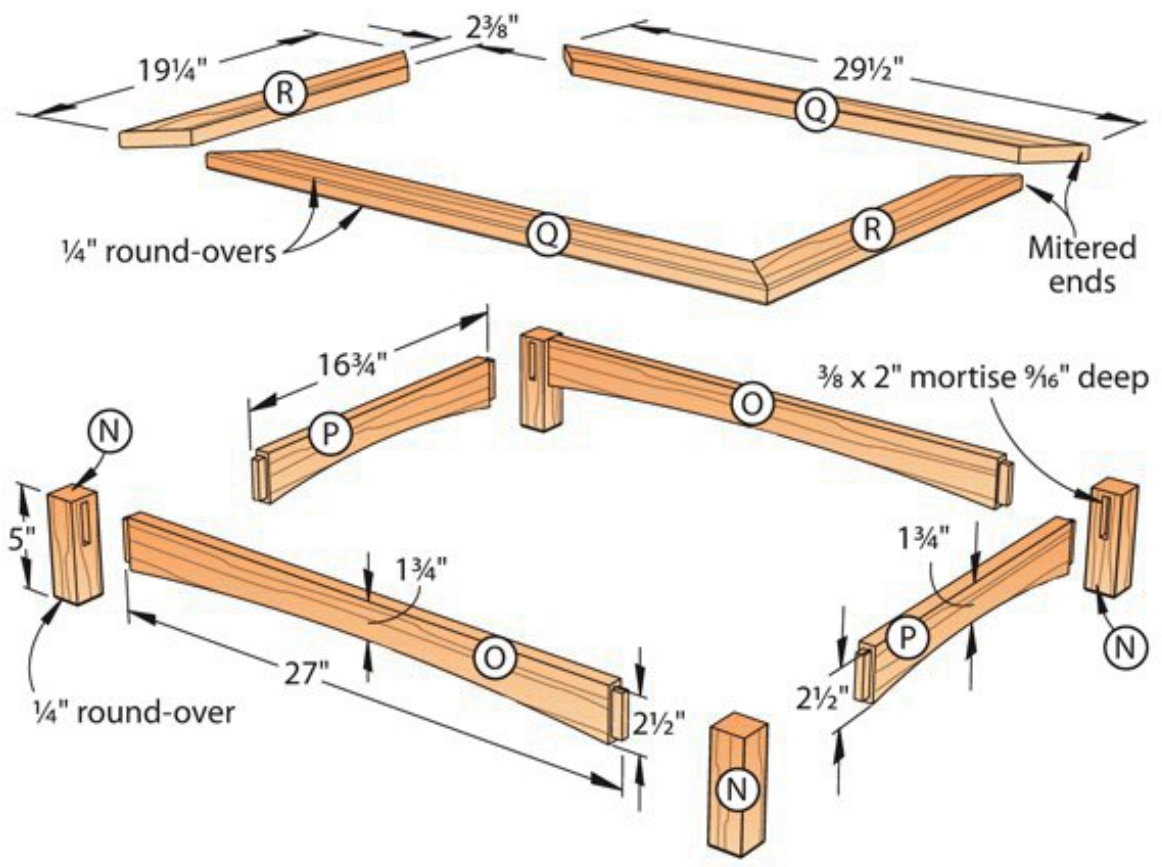


When the corner of the test tenon slides snugly into a mortise, cut rabbets on each end of the rails (O, P).

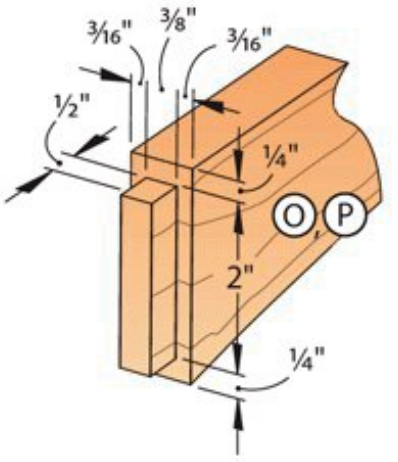
4 LEG



5 BASE

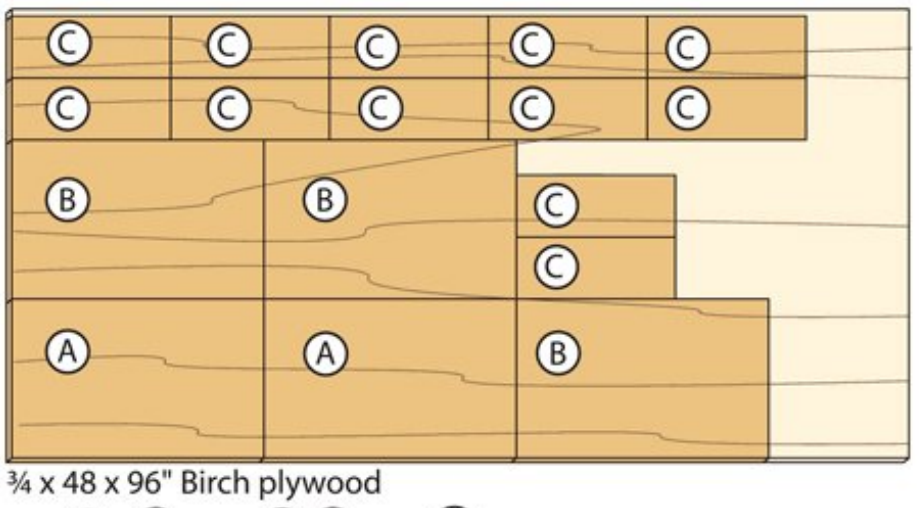


5a TENON DETAIL

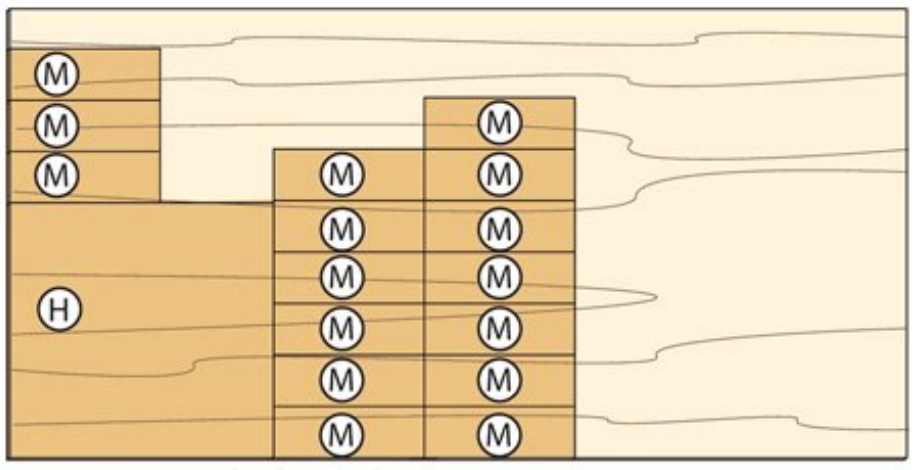


www.journal-plaza.net & www.freedowns.net

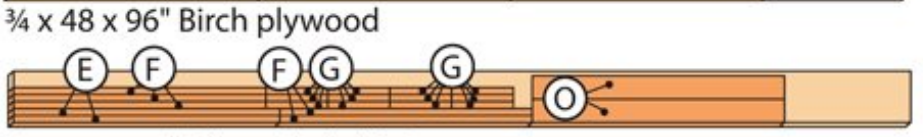
Cutting Diagram



¾ x 48 x 96" Birch plywood

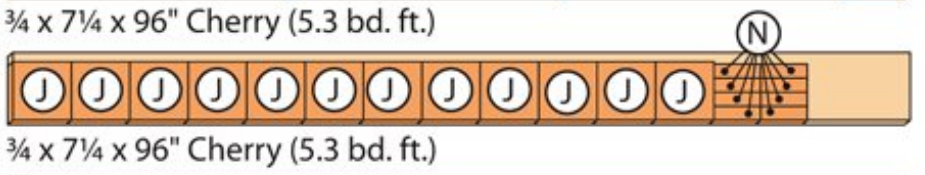


¼ x 48 x 96" Birch plywood

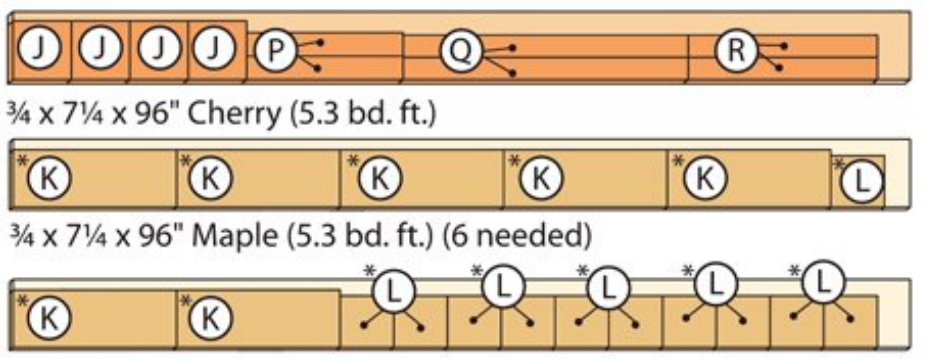


¾ x 5½ x 96" Cherry (4 bd. ft.)

¾ x 7¼ x 96" Cherry (5.3 bd. ft.)

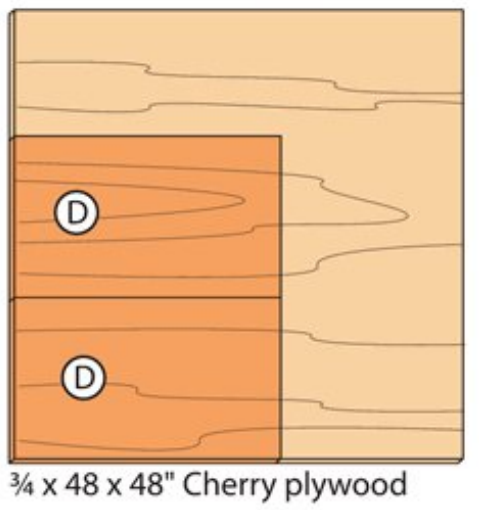


¾ x 7¼ x 96" Cherry (5.3 bd. ft.)



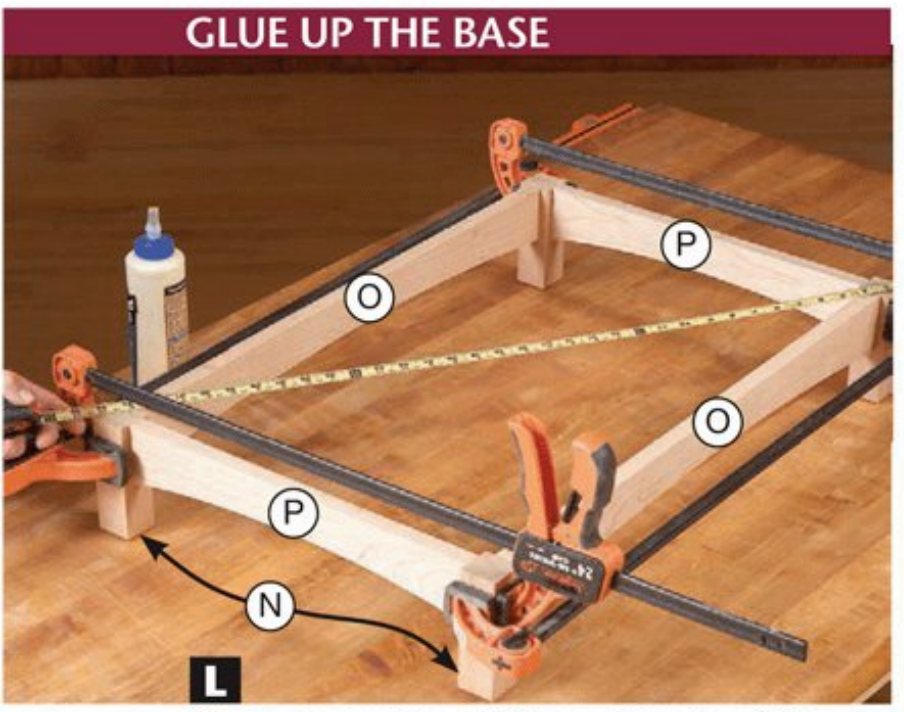
¾ x 7¼ x 96" Maple (5.3 bd. ft.) (6 needed)

¾ x 7¼ x 96" Maple (5.3 bd. ft.) *Plane or resaw to the thickness listed in the Materials List.



¾ x 48 x 48" Cherry plywood

GLUE UP THE BASE



Clamp across the width and length of the base. Adjust the assembly as needed to get identical diagonal measurements.

TAUT TAPE MASTERS MITERS

Wrap strapping tape around the miter joints to pull the joints tight during glue-up and to prevent the pieces from slipping.

MORE RESOURCES

FREE PLANS

- Make a fairing stick for laying out curves: woodmagazine.com/fairing
- Turn your corded drill into a drum sander for smoothing curves: woodmagazine.com/drillsand

FREE VIDEOS

- Learn how to use a fairing stick: woodmagazine.com/fairingvideo
- Watch a corded-drill drum sander in action: woodmagazine.com/drillsanding
- See how to cut dadoes perfectly sized to fit plywood at: woodmagazine.com/deadondado
- Get tips for handling sheet goods at: woodmagazine.com/sheetgoods

RELATED ARTICLES

- For more media storage plans go to woodmagazine.com/plans and type "cd storage" in the search box. $

$=Download these articles for a small fee.

Materials List

Part		FINISHED SIZE T	W	L	Matl.	Qty.
Cabinet						
A	top/bottom	¾"	17"	27¼"†	BP	2
B	shelves	¾"	17"	27¼"†	BP	3
C	dividers	¾"	6⅝"	17"	BP	12
D*	sides	¾"	17¼"	28¼"	CP	2
E*	side trim	¾"	¾"	28¼"	C	2
F*	shelf trim	¾"	¾"	26¾"	C	5
G*	divider trim	¾"	¾"	6⅛"	C	12
H	back	¼"	27¼"	28¼"	BP	1
I	top panel	¾"	18¾"	29¾"	EC	1
Drawers						
J	fronts	¾"	6 1/16"†	6"†	C	16
K	sides	½"	6 1/16"†	17½"	SM	32
L	backs	½"	5¾"	5½"	SM	16
M	bottoms	¼"	5½"	16⅛"	BP	16
Base						
N*	legs	1½"	1½"	5"	C	4
O	front/back rails	¾"	2½"	27"	C	2
P	side rails	¾"	2½"	16¾"	C	2
Q*	front/back base trim	¾"	2⅜"	29½"	C	2
R*	side base trim	¾"	2⅜"	19¼"	C	2

*Parts initially cut oversize. See the instructions.
† See instructions to determine exact dimensions.

Materials key: BP–birch plywood; CP–cherry plywood; C–cherry; EC–edge-glued cherry; SM–soft maple.
Supplies: Double-faced tape, #8×¾" flathead wood screws (15), #8×1¼" flathead wood screws (14).
Blade and bits: Stacked dado set; ¼" round-over router bit; ⅜" Forstner bit.

Source

Drawer pulls: Bronze label holders with pull (16) item no. 02004947, $3.99, VanDyke's Restorers, 800-558-1234, vandykes.com.

In the opening photo: Better Homes and Gardens® Antique Bronze Table Lamp Base sold at Wal-mart®. Shade sold separately.

Written by **Craig Ruegsegger** with **Jeff Mertz**
Project design: **Kevin Boyle**
Illustrations: **Roxanne LeMoine; Lorna Johnson**

www.journal-plaza.net & www.freedowns.net

Shop-Proven Products

These woodworking wares passed our shop trials

About our product tests

We test hundreds of tools and accessories, but only those that earn at least three stars for performance make the final cut and appear in this section. Prices are current at the time of article production and do not include shipping, where applicable.

Delta delivers a new spin on mini-lathes: reverse

Until recently, only full-sized wood lathes could reverse direction. But Delta has changed that by incorporating a reverse function into its variable-speed benchtop lathe. I really like this feature for sanding because I can better smooth all the wood fibers that tend to lean the direction of my cuts. And I know some left-handed woodturners who like to stand on the back side of the lathe to hollow out vessels in reverse.

I tested both the 5-speed 46-455—which does not have the reverse capability—and the variable-speed 46-460. Although the 5-speed model demonstrated more torque than its sibling, its slowest speed, 500 rpm, proved too fast for roughing out a 10"-or-larger bowl blank (something both machines have capacity for, thanks to 12½" of swing). And I would have liked another speed between that and its 900-rpm second speed, especially for bowl and vessel turning.

I'll gladly sacrifice the torque for finer speed control, however, and the 46-460 runs from 250 to 4,000 rpm in three speed ranges. Both lathes have a large access panel to move the drive belt for easy speed changes. Each also exhibited a vibration sufficient to loosen the banjo and tailstock locks at times.

—Tested by Brian Simmons, a professional woodturner and teacher

12½" mini-lathes

Performance		★★★★☆
Price	5-speed, #46-455	$500
	variable speed, #46-460	$600

Delta Machinery
800-223-7278; deltaportercable.com

These pocket holes let dust filter through

Shop aprons protect your clothes and keep tools close at hand, but they also collect dust and chips in the pockets. So when the folks at Duluth Trading Company asked me what I wanted in a woodworking apron, I said "clean pockets." They responded by making this apron with mesh bottoms in the three largest pockets. After using this apron for several months, I love how most of the debris slips right through. Hook-and-loop flaps on some pockets secure items you don't want to get loose, such as a small square or block plane. And the apron is made of a durable, lightweight material, so it stands up against sharp-edged tools as well as stains, finishes, and glues.

—Tested by Kevin Boyle, Senior Design Editor

Shop apron, #85021

Performance	★★★★★
Price	$26.50

Duluth Trading Company
800-505-8888; duluthtrading.com

www.journal-plaza.net & www.freedowns.net

HARBOR FREIGHT TOOLS

Quality Tools at Ridiculously Low Prices

FACTORY DIRECT TO YOU!

How does Harbor Freight Tools sell high quality tools at such ridiculously low prices? We buy direct from the factories who also supply the major brands and sell direct to you. It's just that simple! Come see for yourself at one of our 330 STORES NATIONWIDE and use this 20% OFF Coupon on any of our 7,000 products. We stock Automotive products, Shop Equipment, Hand Tools, Tarps, Compressors, Air & Power Tools, Material Handling, Woodworking Tools, Welders, Tool Boxes, Outdoor Equipment, Generators, and much more.

NOBODY BEATS OUR QUALITY, SERVICE AND PRICE!

- √ We Have 10 Million Satisfied Customers
- √ We Buy Factory Direct and Pass the SAVINGS on to YOU!
- √ Shop & Compare Our Quality Brands Against Other National Brands
- √ Thousands of People Switch to Harbor Freight Tools Every Day!
- √ NO HASSLE RETURN POLICY
- √ Family Owned & Operated

LIFETIME WARRANTY
ON ALL HAND TOOLS!

SUPER COUPON!

20%OFF ANY SINGLE ITEM!

Bring this coupon and Save 20% on one single item purchased at Harbor Freight Tools. Cannot be used with any other discount or coupon. One coupon per purchase. One coupon per customer. Coupon not valid on prior purchases or purchase of gift cards or purchase of extended service plans. Offer good on in-stock merchandise only. Savings discount percentage off Harbor Freight Tools current prices, including sale prices. This coupon cannot be duplicated in any manner including photocopies and computer printouts. Original coupon must be presented in order to receive the discount. All Campbell Hausfeld products are excluded from this offer. This offer is not valid on food or beverage items sold in our retail stores. Valid only in Retail Stores through 7/23/10.

78647187

See HarborFreightusa.com/Wood for additional SUPER COUPONS

SUPER COUPON!

10" SLIDING COMPOUND MITER SAW

CHICAGO Electric Power Tools

LOT NO. 98199/90891/96697

$79.99 REG. PRICE $139.99

SAVE $60

17665829

HARBOR FREIGHT TOOLS - LIMIT 1

These valuable coupons are only good when presented at your nearest Harbor Freight Tools store. Offer Ends 7/23/10.

Coupons valid in Retail Store Only. Coupon not valid on prior purchases. Coupon cannot be bought, sold, or transferred. This coupon cannot be duplicated in any manner including photocopies and computer printouts. Original coupon must be presented in order to receive the discount.

SUPER COUPON!

CENTRAL MACHINERY

16" VARIABLE SPEED SCROLL SAW

LOT NO. 93012

$49.99 REG. PRICE $79.99

SAVE 37%

72896400

HARBOR FREIGHT TOOLS - LIMIT 1

These valuable coupons are only good when presented at your nearest Harbor Freight Tools store. Offer Ends 7/23/10.

Coupons valid in Retail Store Only. Coupon not valid on prior purchases. Coupon cannot be bought, sold, or transferred. This coupon cannot be duplicated in any manner including photocopies and computer printouts. Original coupon must be presented in order to receive the discount.

SUPER COUPON!

LOT NO. 67256

MULTIFUNCTION POWER TOOL

CHICAGO Electric Power Tools

$34.99 REG. PRICE $59.99

SAVE 41%

40621658

HARBOR FREIGHT TOOLS - LIMIT 1

These valuable coupons are only good when presented at your nearest Harbor Freight Tools store. Offer Ends 7/23/10.

Coupons valid in Retail Store Only. Coupon not valid on prior purchases. Coupon cannot be bought, sold, or transferred. This coupon cannot be duplicated in any manner including photocopies and computer printouts. Original coupon must be presented in order to receive the discount.

SUPER COUPON!

CENTRAL MACHINERY

OSCILLATING SPINDLE SANDER

LOT NO. 95088

REG. PRICE $119.99 **$79.99**

SAVE $40

88907472

HARBOR FREIGHT TOOLS - LIMIT 1

These valuable coupons are only good when presented at your nearest Harbor Freight Tools store. Offer Ends 7/23/10.

Coupons valid in Retail Store Only. Coupon not valid on prior purchases. Coupon cannot be bought, sold, or transferred. This coupon cannot be duplicated in any manner including photocopies and computer printouts. Original coupon must be presented in order to receive the discount.

SUPER COUPON!

CENTRAL MACHINERY

4" x 36" BELT/ 6" DISC SANDER

LOT NO. 93981/97181

Item 93981 shown

SAVE 44% **$49.99** REG. PRICE $89.99

35318500

HARBOR FREIGHT TOOLS - LIMIT 1

These valuable coupons are only good when presented at your nearest Harbor Freight Tools store. Offer Ends 7/23/10.

Coupons valid in Retail Store Only. Coupon not valid on prior purchases. Coupon cannot be bought, sold, or transferred. This coupon cannot be duplicated in any manner including photocopies and computer printouts. Original coupon must be presented in order to receive the discount.

SUPER COUPON!

CENTRAL MACHINERY

2 HP INDUSTRIAL 5 MICRON DUST COLLECTOR

LOT NO. 97869

$139.99 REGULAR PRICE $249.99

SAVE $110

36054344

HARBOR FREIGHT TOOLS - LIMIT 1

These valuable coupons are only good when presented at your nearest Harbor Freight Tools store. Offer Ends 7/23/10.

Coupons valid in Retail Store Only. Coupon not valid on prior purchases. Coupon cannot be bought, sold, or transferred. This coupon cannot be duplicated in any manner including photocopies and computer printouts. Original coupon must be presented in order to receive the discount.

SUPER COUPON!

WE CARRY A FULL LINE OF FASTENERS!

CENTRAL PNEUMATIC CONTRACTOR SERIES

18 GAUGE 2-IN-1 NAILER/STAPLER

LOT NO. 97524/40116

Item 97524 shown

$14.99 REG. PRICE $29.99

SAVE 50%

51896876

HARBOR FREIGHT TOOLS - LIMIT 1

These valuable coupons are only good when presented at your nearest Harbor Freight Tools store. Offer Ends 7/23/10.

Coupons valid in Retail Store Only. Coupon not valid on prior purchases. Coupon cannot be bought, sold, or transferred. This coupon cannot be duplicated in any manner including photocopies and computer printouts. Original coupon must be presented in order to receive the discount.

SUPER COUPON!

LOT NO. 46807

12" RATCHET BAR CLAMP/ SPREADER

REG. PRICE $6.99 **$1.99**

SAVE 71%

83764944

HARBOR FREIGHT TOOLS - LIMIT 4

These valuable coupons are only good when presented at your nearest Harbor Freight Tools store. Offer Ends 7/23/10.

Coupons valid in Retail Store Only. Coupon not valid on prior purchases. Coupon cannot be bought, sold, or transferred. This coupon cannot be duplicated in any manner including photocopies and computer printouts. Original coupon must be presented in order to receive the discount.

We Will Beat Any Competitor's Price Within 1 Year Of Purchase!

330 STORES NATIONWIDE

TO FIND THE STORE NEAREST YOU CHECK: 1-800-657-8001 or HarborFreightusa.com/Wood

www.journal-plaza.net & www.freedowns.net

Ask WOOD

Answers to your questions from letters, e-mails, and WOOD Online®

HAVE A QUESTION?

For an answer to your woodworking question, write to **ASK WOOD, 1716 Locust St., LS-221, Des Moines, IA 50309-3023** or e-mail us at **askwood@woodmagazine.com**. For immediate feedback from your fellow woodworkers, post your questions on one of our woodworking forums at **woodmagazine.com/forums**.

A plane repair for a wobbly chair

Q: As the woodworker in my family, I've apparently also been designated the furniture repairman. The latest thing on my bench is a chair with a few loose legs and stretchers. One stretcher even pulls right out of its socket. How do I tighten the joints?

—Timothy Conner, Charlotte, N.C.

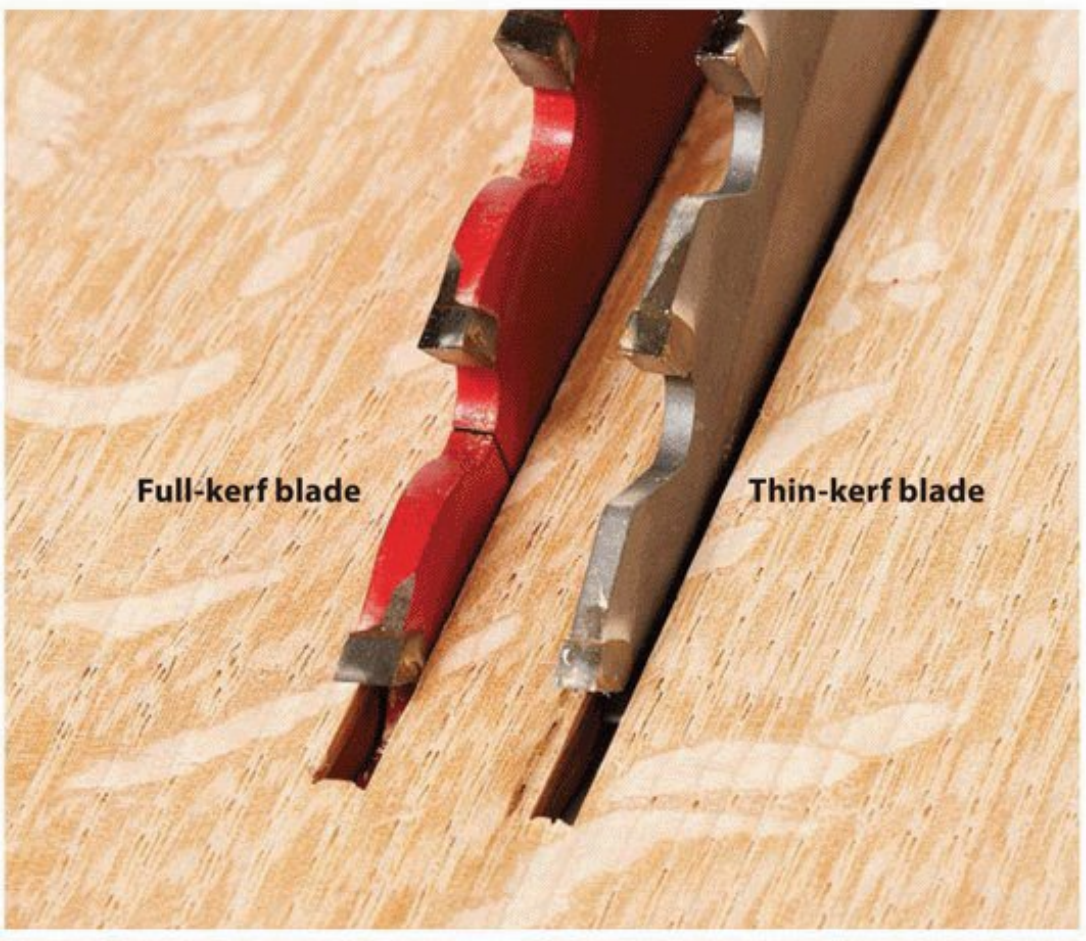
A: The first step, Timothy, is to carefully disassemble any loose joints. Use a spreader between the legs and slowly apply pressure to separate the tenons from the sockets, as shown at *right*. Heat stubborn joints for a couple minutes with a heat gun or a hair-dryer set on high before trying the spreader again. Don't skip any suspect joints because they might be hard to access after you re-glue the others.

With the joints separated, clean any old glue from the tenon and the socket with sandpaper and files. Next, enlarge the tenons so they are once again snug in their sockets. To do this, glue and wrap them with hand-plane shavings, as shown at *right*. After the glue dries, trim away any protruding shavings with a hobby knife and test fit the joint. If it's still too loose, apply another layer of hand-plane shavings. Too tight? Use sandpaper or a file to size it back down to a snug fit. Then reglue the joint.

Is a thin-kerf blade all I need?

Q: As a newbie woodworker, I'm trying to stock my shop inexpensively. I've read that thin-kerf, carbide-tipped tablesaw blades waste less wood and put less strain on the saw's motor. If they work so much better, is there any reason to even buy a full-kerf blade?

—Tom Messerly, Huntington, W.Va.



A: Tom, you are correct about the advantages of thin-kerf blades. On average about 1/32" slimmer than its full-kerf counterpart, the thin-kerf blade marginally reduces wasted wood, but this advantage only really becomes noticeable if you are doing a lot of thin-strip ripping. However, the reduction in sawdust generated is a more noticeable boon, especially if you're ripping a lot of air-fouling MDF.

As for motor strain, if your well-aligned saw is bogging down with a full-kerf blade, a switch to thin-kerf will likely eliminate the problem. (The general rule of thumb: thin-kerf blades for saws under 3-hp and thin- or full-kerf for saws 3-hp and over.)

While conventional wisdom has long held that thin-kerf blades provide certain performance trade-offs, such as more flex or chatter due to the thinner plate, these trade-offs have largely faded in the face of new materials and manufacturing technologies.

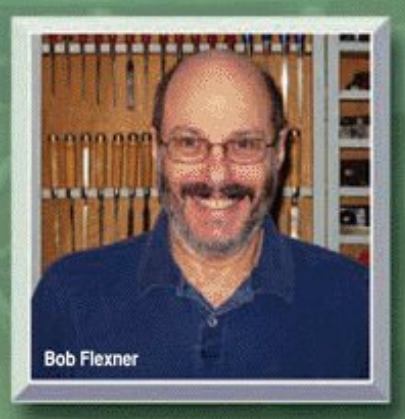
Cliff Paddock, cutting tools product manager for Freud America, Inc., says, "The stability of blades derives from a number of factors, including the quality of the steel plate, precise tensioning and flattening of the blade body, and precision balancing. I would not agree that a full kerf automatically produces a smoother cut."

According to Cliff, the choice to use a full-kerf blade on a modern, 3-hp tablesaw largely comes down to personal preference. "In our shop here at Freud we use thin-kerf blades in most applications, even though all of our tablesaws have 3-hp or larger motors."

continued on page 82

www.journal-plaza.net & www.freedowns.net

The Finishing Store.com™

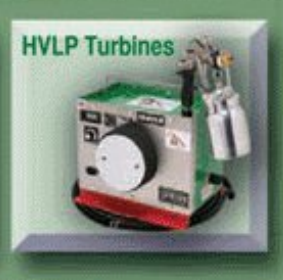


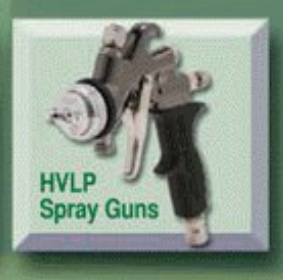
Finishing Just Got Easier.

TheFinishingStore.com makes the essential job of finishing easier to learn and do.

Now when you click on TheFinishingStore.com you'll find:

- **Finishing Expert Bob Flexner with monthly articles and Insider's Tips and Tricks**
- **400 Precision Products, Informational Videos, HVLP Systems, Special Savings and more.**





ApolloSprayers HVLP

Call or Click today *1-888-900-4857 or www.TheFinishingStore.com*

Dept. w410

WOOD® Magazine's All-Time Favorite

Outdoor Furniture Plans

Porch Glider Plan
WP-OFS-1028 $13.95

Porch Swing Plan
WP-OFS-1002 $10.95

Adirondack Rocker
WP-OFS-1016 $13.95

Adirondack Footstool and Side Table
WP-OFS-1014 $10.95

Adirondack Chair
WP-OFS-1001 $13.95

Call toll-free 1-888-636-4478 to order today!

WD0510

Simply the best around.

Now with new additions to an award-winning line.

Model 10-315
12" Deluxe Bandsaw

Model 10-380
22" Bandsaw

Model 10-370
18" Wood/Metal Bandsaw

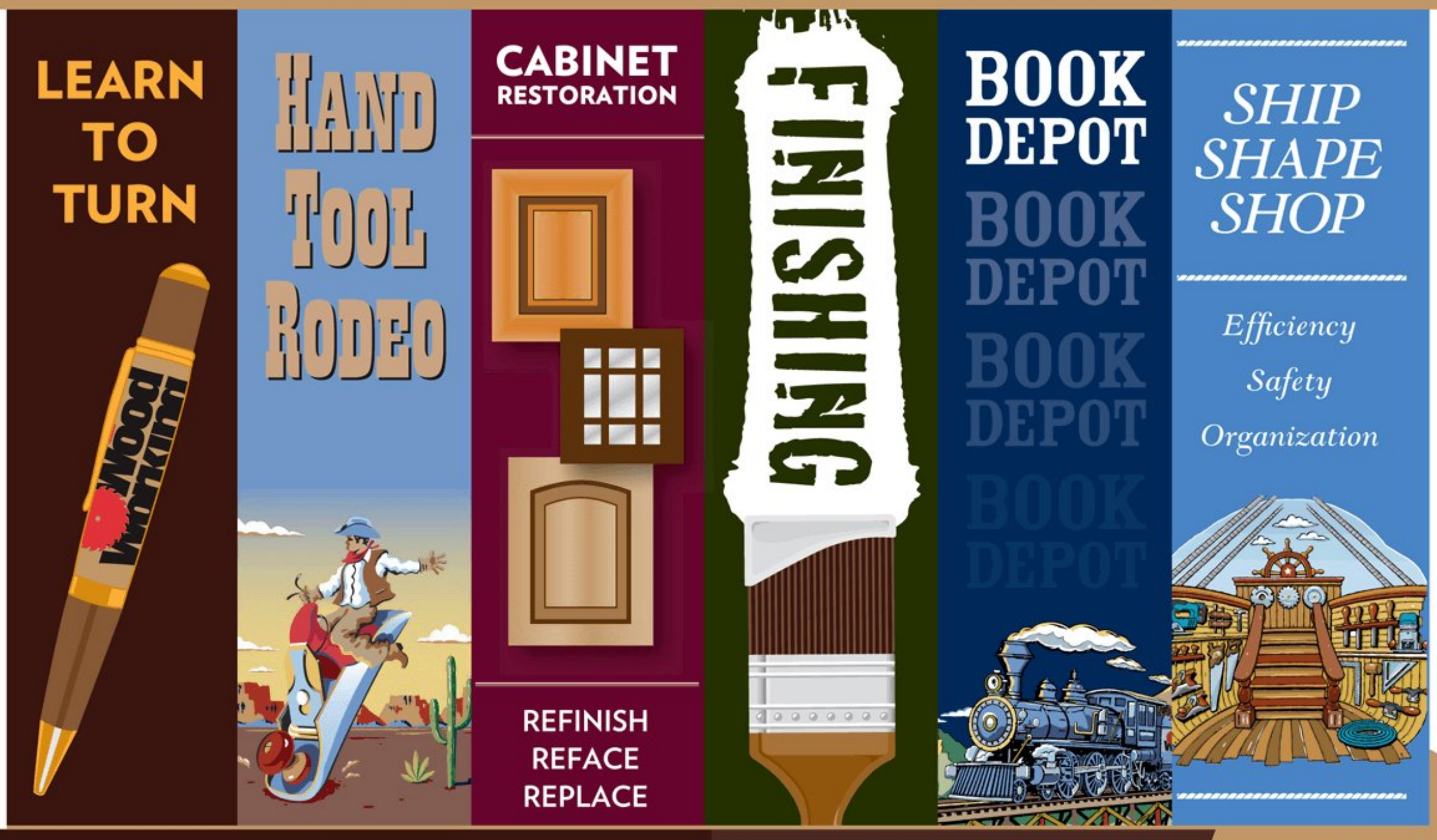
Bandsaws, lathes, sanders, planer/jointers, drill presses and more. RIKON Power Tools has a machine for every woodworker. **For more information on RIKON's line of power tools, visit www.rikontools.com.**

RIKON
www.rikontools.com
877-884-5167

The Woodworking Shows

The Hands-on Trade Show for Woodworkers & DIY'ers

$500 worth of FREE education programs with admission



Coming soon to your town:

Fredericksburg, VA *Mar 12-14*
Tampa, FL *Mar 19-21*
Chantilly, VA *Apr 9-11*
Houston, TX *Apr 16-18*
Huntsville, AL *Apr 23-25*

visit online for info, tickets and coupons

Be a ShowOFF!

Enter your best work for a chance to win a Delta Unisaw!

visit online for contest details

100's of national and local exhibitors

BAD DOG TOOLS · ApolloSprayers RYOBI · DELTA · PORTER CABLE · SOY•Gel FRANMAR · STOCKROOM

www.TheWoodworkingShows.com | 800-826-8257

www.journal-plaza.net & www.freedowns.net

U.S. GOV'T GOLD AT-COST

TODAY - The United States Rare Coin & Bullion Reserve has scheduled the final release of U.S. Gov't Issued $5 Gold Coins previously held at the U.S. Mint at West Point. These Gov't Issued Gold Coins are being released on a first-come, first-serve basis, for the incredible markup-free price of $118 each. This "at-cost" Gov't Gold offer could be cancelled at any time. Do not delay. Call a Sr. Gold Specialist today.

Own Gov't Issued Gold Coins

DUE TO STRICT LIMITED AVAILABILITY, TELEPHONE ORDERS WILL BE ACCEPTED ON A FIRST-COME, FIRST-SERVE BASIS ACCORDING TO THE TIME AND DATE OF THE ORDER.

Markup-Free Price of ONLY

$118.00 EACH

Coins enlarged to show detail.

If you've been waiting to move your hard-earned money into precious metals, the time is now to consider transferring your U.S. dollars into United States Government Gold. The Gold market is on the move, up more than 290% over the past 10 years - outpacing the DOW, NASDAQ and S&P 500. Call immediately to order your United States Gold Coins direct from our Main Vault Facility, "at-cost", for the amazing price of only $118 per coin. Special arrangements can be made for Gold purchases over $50,000. Order your Gold today!

1 – Gov't Issued Gold Coin	**$**	**118.00**
5 – Gov't Issued Gold Coins	**$**	**590.00**
10 – Gov't Issued Gold Coins	**$**	**1,180.00**

AT-COST OFFER LIMITED TO PURCHASES OF 10 COINS ($1,180) PER HOUSEHOLD PLUS SHIPPING & INSURANCE. MINIMUM ORDER 5 GOLD COINS.

CALL TOLL FREE (24 Hours A Day, 7 Days A Week)

1-888-465-3014

MASTERCARD • VISA • AMEX • DISCOVER • CHECK

UNITED STATES
RARE COIN & BULLION RESERVE
Distributor of Government Gold. Not affiliated with the U.S. Government.

Vault No. WOD1-118

No one, including the United States Rare Coin and Bullion Reserve can guarantee a Gold Coin's future value will go up or down. © 2010 United States Rare Coin and Bullion Reserve

www.journal-plaza.net & www.freedowns.net

From Hobbyist to Industrial

Oneida Air Systems is #1 in Dust Collection.

- Top Award Winner in All Independent Tests Since 1993.

Some of Our Industry Awards:

2000 American Woodworker Editors' Choice · 2001 American Woodworker Editors' Choice · 2006 American Woodworker Editors' Pick · Wood Magazine Top Tool Approved 2003 · 1997 Wood Magazine Editors' Choice Top Tool · 2006 Harvey Innovation Award · 2006 2-Star Rating Wood Magazine · 2009 2-Star Rating Wood Magazine · Wood Magazine Top New Tools 2009

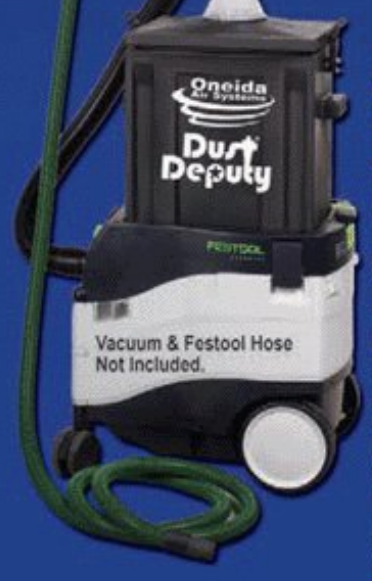
FREE Upgrade to GE Certified HEPA Media Filter with System Purchase!

Most Systems For Limited Time Only!

Made in the USA.

- Built to Last A Lifetime.
- FREE Design Consultation
- 1.5hp and Larger Systems
- One Stop Shopping for All of Your Dust Collection Needs.

New!



The Dust Deputy

Turn your Festool CT vacuum into a cyclonic super dust system.

9 gallon dust bin clips on top.

Kit shown here designed to fit Festool CT shop vacuums - Introductory Price - $229.00

Kit contains Cyclone, 9 gal. dust box, hose and connecting elbow. Can also be used with any shop vacuum.

Deluxe Dust Deputy Kit - $99.00
D.I.Y. Dust Deputy - $59.00

Oneida Air Systems

Dust Collection Since 1993.

Call Today for FREE Catalog!

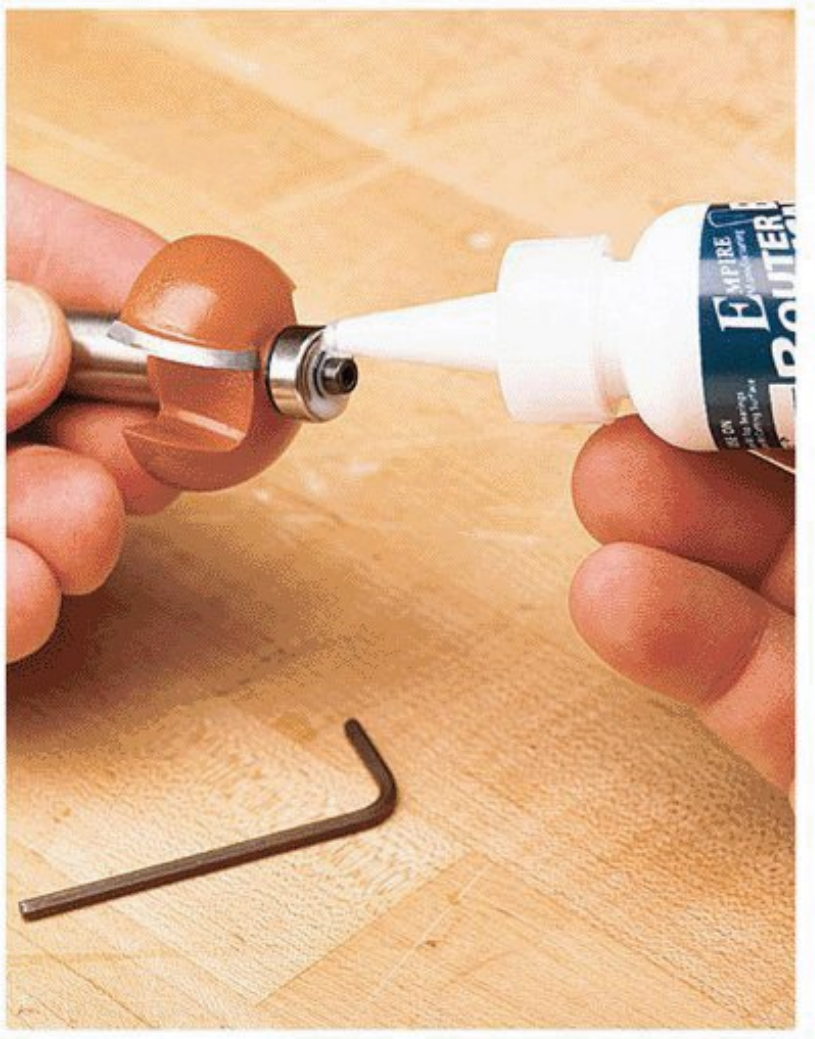
1.800.732.4065

Order Online!

See Our Complete Product Line & Videos

www.oneida-air.com

www.journal-plaza.net & www.freedowns.net



Bearing bit bites the dust after cleaning

Q: After gumming up a bearing-guided bit while routing pine, I soaked it in some blade and bit cleaner before scrubbing it clean. The bit seems to cut better, but now the bearing doesn't spin smoothly. What happened?

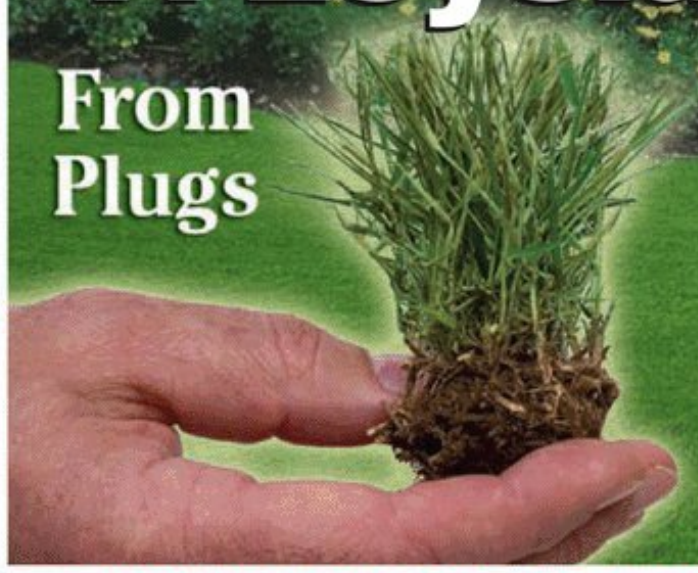
—John McCurdy, Boca Raton, Fla.

A: John, it's likely that the solvent you used to soften and remove the pitch buildup on the bit also leached the lubrication out of the bearing. Discard the bearing and get a replacement from the bit manufacturer.

Next time you need to clean a bearing-guided bit, first remove the bearing and inspect it. If it needs cleaning, don't soak it along with the rest of the bit. Simply wet a shop cloth with your blade and bit cleaner, scrub the bearing's surface clean, and wipe it dry. Apply high-speed, router-bearing lubricant, such as Empire's Router Bit Lube (Woodcraft item no. 829400, $10, 800-225-1153, woodcraft.com), before reinstalling the bearing.

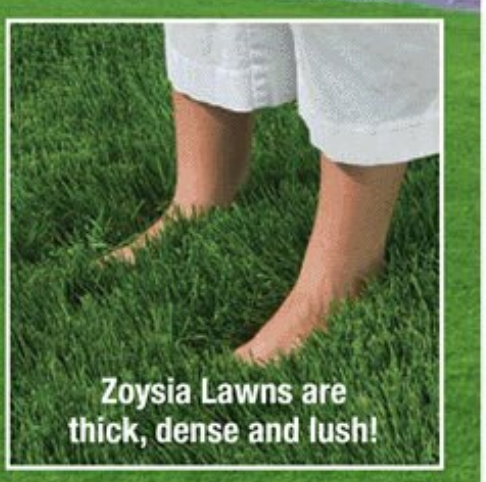
If you notice pitch buildup on your router bit or blades, don't wait to clean it off. Not only does it affect performance, mimicking the effects of a dullling, but the resins could also corrode the body and carbide cutters, hastening actual dulling.

SAVE When You Grow A Zoysia Lawn From Plugs!



To A Fabulous Lawn

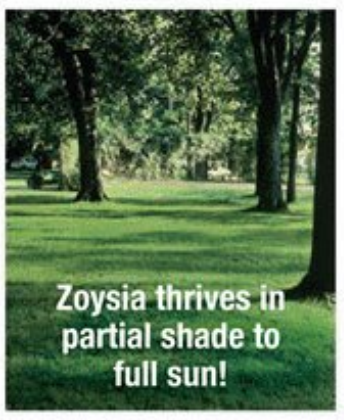
ZOYSIA FARM NURSERIES
Improving America's Lawns Since 1953



GRASS SEED WILL *NEVER* GROW A LAWN LIKE THIS!

Save Water! Save Time! Save Work! Save Money!

Grass Seed Is For The Birds!



Stop wasting money, time and work sowing new grass seed each spring, only to see birds eat the seed – or rain wash it away – before it can root. Plant a genuine Amazoy™ Zoysia lawn from our living Plugs only once... and never plant a new lawn again!

Zoysia Grows Where Other Grass Doesn't!

Zoysia is the perfect choice for hard-to-cover spots, areas that are play-worn or have partial shade, and for stopping erosion on slopes. North, South, East, West – Zoysia will grow in *any* soil, no ifs, ands or buts!

Each Zoysia Plug You Plant In Your Soil Is
GUARANTEED TO GROW
Within 45 Days Or We'll Replace It FREE!

To ensure best results, we ship you living sheets of genuine Amazoy™ Zoysia Grass, harvested direct from our farms. Plugs are not cut all the way through. Before planting, simply finish the separation by cutting 1"-sq. Plugs with shears or knife. Then follow the included easy instructions to plant Plugs into small plug holes about a foot apart. Our guarantee and planting method are your assurance of lawn success backed by more than 5 decades of specialized lawn experience.

©2010 Zoysia Farm Nurseries, 3617 Old Taneytown Rd, Taneytown, MD 21787

Eliminates Endless Weeds And Weeding!

No more pulling out weeds by hand or weeds sprouting up all over your lawn. Zoysia Plugs spread into a dense, plush, deep-rooted, established lawn that drives out unwanted growth and stops crabgrass and summer weeds from germinating.

Environmentally Friendly, No Chemicals Needed!

No weeding means no chemicals. You'll never have to spray poisonous pesticides and weed killers again! Zoysia lawns are safer for the environment, as well as for family and pets!

Cuts Watering & Mowing By As Much As 2/3!

Many established Zoysia lawns only need to be mowed once or twice a season. Watering is rarely, if ever, needed – even in summer!

Meyer Zoysia Grass was perfected by the U.S. Gov't, released in cooperation with the U.S. Golf Association as a superior grass.

www.ZoysiaFarms.com/mag

Stays Green In Summer Through Heat & Drought!

When ordinary lawns brown up in summer heat and drought, your Zoysia lawn stays green and beautiful. The hotter it gets, the better it grows. *Zoysia thrives in blistering heat (120°)*, yet it won't winter-kill to 30° below zero. It only goes off its green color after killing frosts, but color returns with consistent spring warmth. Zoysia is the perfect choice for water restrictions and drought areas!

Our Customers Love Their Zoysia Lawns!

One of our typical customers, Mrs. M.R. Mitter of PA, wrote how "I've never watered it, only when I put the Plugs in... Last summer we had it mowed 2 times... When everybody's lawns here are brown from drought, ours just stays as green as ever!"

Order Now And Save!

The more Amazoy™ Zoysia Plugs you order, the more you SAVE! And remember, once your Zoysia lawn is established, you'll have an endless supply of new Plugs for planting wherever you need them. Order now!

FREE! PLANTING TOOL
With Order of 400 Plugs or More!
Saves time, work and effort when making holes for Plugs!

Order Your ZOYSIA Plugs Now — Harvested Daily From Our Farms And Shipped To You Direct!

ZOYSIA GRASS SUPER SALE — SAVE OVER 50%!
Get Up To 900 Plugs — FREE!

Please send me guaranteed Amazoy as checked:

PACK	# PLUGS	# Free Plugs	Free Bonus	Retail Value	Your PRICE	+ Shipping	SAVINGS
❑ Basic	100	–	–	$ 8.95	$ 8.95	$ 2.50	–
❑ 2 Basic Packs + 1 FREE	200	100	–	$ 26.85	$17.90	$ 5.00	30%
❑ 4 Basic Packs + 2 FREE	400	200	Free Step-on Plugger	$ 62.65	$35.80	$ 7.50	40%
❑ 5 Basic Packs + 3 FREE	500	300	Free Step-on Plugger	$ 80.55	$44.75	$10.00	42%
❑ 6 Basic Packs + 4 FREE	600	400	Free Step-on Plugger	$ 98.45	$53.70	$12.50	44%
❑ 9 Basic Packs + 7 FREE	900	700	Free Amazoy Power Auger	$168.15	$80.55	$15.00	50%
❑ 10 Basic Packs + 9 FREE	1000	900	Free Amazoy Power Auger	$195.00	$89.50	$17.50	54%

❑ Extra Step-on Plugger **$8.95**

❑ Extra Amazoy Power Auger™ for 3/8" Drill **$24.95**

Amazoy is the trademark registered U.S. Patent Office for our Meyer Zoysia grass.

Mail to: ZOYSIA FARM NURSERIES
3617 Old Taneytown Road, Taneytown, MD 21787

Dept. 5556

Write price of order here $ _____

Md. residents add 6% tax $ _____

Shipping $ _____

ENCLOSED TOTAL $ _____

Payment method (check one)
❑ Check ❑ MO
❑ MasterCard
❑ Visa

Card # _____ Exp. Date _____

Name _____

Address _____

City _____ State _____

Zip _____ Phone _____

We ship all orders the same day plugs are packed at earliest correct planting time in your area.

Order Now! www.ZoysiaFarms.com/mag

Not shipped outside the USA or into WA or OR

www.journal-plaza.net & www.freedowns.net

"As the master craftsman who opened the famous Lincoln Pocket Watch at the Smithsonian, I recently reviewed the the Stauer Meisterzeit timepiece. The assembly and the precision of the mechanical movement ranks with the best."
—George Thomas
Towson Watch Company
Stauer
27 JEWELS
Automatic
RESISTANT
3ATM WATER
Authentic
Stauer
Historical Reproductions

We Can Only Find One

A rare chance to claim a unique piece of watchmaking history for under $100!

Eighty-six years ago, a watchmaker in Paris famous for building the magnificent clocks at Versailles created a legendary timepiece. He invented the first watch with an automatic mechanical drive. These innovative movements required no batteries and never needed to be manually wound. Only seven of these ultra-rare watches were ever made and we've studied the one surviving masterpiece in a watch history museum. Inspired by history, classic design and technology, our Stauer ***Meisterzeit II*** has been painstakingly handcrafted to meet the demanding standards of vintage watch collectors.

Why the new "antique" is better than the original. The original timepiece was truly innovative, but, as we studied it closely, we realized that we could engineer ours with a much higher level of precision. The 27-ruby-jewel movement utilizes an automatic self-winding mechanism inspired by a patent from 1923, but built on $31 million in state-of-the-art Swiss-made machinery. With an exhibition back, you can see into the heart of the engineering and view the rotor spin—it's powered by the movement of your body.

This limited edition Stauer ***Meisterzeit II*** allows you to wear a watch far more exclusive than most new "upscale" models. Here is your chance to claim a piece of watchmaking history in a rare design that is priced to wear everyday.

Elegant and accurate. This refined beauty has a fastidious side. Each movement and engine-turned rotor is tested for 15 days and then certified before it leaves the factory.

The best part is that with our special price, you can wear a superb classic historical reproduction watch and laugh all the way to the bank. Stauer specializes in classic timeless watches and jewelry that are made for the millionaires who want to keep their millions. This watch will quickly move to heirloom status in your household.

View the precision movement of the *Meisterzeit* through the rear exhibition port.

Try it for 30 days and if you are not thrilled with the beauty and construction of the ***Meisterzeit II***, simply return it for a refund of the purchase price.

Only 4,999 available. Since it takes about 6 months to build each watch, the release is a limited edition, so please be sure to order yours soon.

WATCH SPECS:
- 18K Gold-clad case and bezel
- Precision 27-jeweled movement
- Interior dials display day and month
- Croc-embossed leather strap
- Fits 6 3/4"–8 1/4" wrist

80% OFF

Exclusively Through Stauer

Stauer Meisterzeit II Watch—~~$395~~
Now **only $95** +S&P ***Save $300!***

Call now to take advantage of this limited offer.

1-888-324-4351

Promotional Code MZW183-01
Please mention this code when you call.

Stauer
14101 Southcross Drive W.,
Dept. MZW183-01
Burnsville, Minnesota 55337
www.stauer.com

Smart Luxuries—Surprising Prices

www.journal-plaza.net & www.freedowns.net

Bonus Offer
$50 Savings Card

"We have had the Sleep Number bed for a few years now and can say it is the very best investment we have ever made. Back pain was a fact of life for me for years. After sleeping on the Sleep Number bed, I have improved significantly. It is amazing to go to bed in pain and wake up refreshed and pain free."

Janet D., Mt. Vernon, WA

Sleep Better On Air®

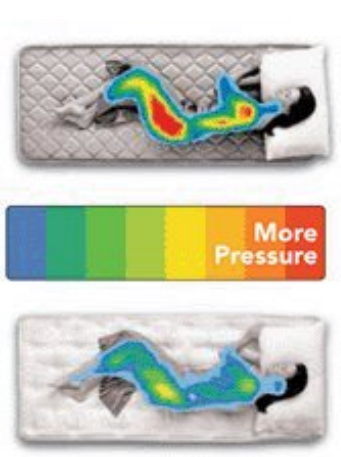
Are You Frustrated by the Quality of Your Sleep?

Do you toss and turn at night? Can't seem to find a comfortable position? Does your back ache when you awake? These are signs that your mattress may not be supporting you properly, robbing you of the sleep you need. SUFFER NO MORE!

FIRMNESS ADJUSTS ON EACH SIDE

The Sleep Number® Bed Makes Innersprings Obsolete

A traditional innerspring mattress offers only hard metal coils for support. By contrast, the *Sleep Number* bed's revolutionary design features air-chamber technology that adjusts to your ideal level of firmness and support.



An innerspring mattress creates uncomfortable pressure points that can disrupt sleep.

A Sleep Number® bed adjusts to your body, relieving pressure points.

You Customize the Firmness

The Sleep Number Bed by Select Comfort™ is unlike any other. It's the bed you adjust to your exact comfort and firmness preference, your SLEEP NUMBER® setting. Our easy-to-use handheld remote and advanced air-chamber technology allow you to quickly adjust the firmness from extra firm to feather soft at the touch of a button.

Each Side of the Bed Adjusts Independently

Best of all, each side of the SLEEP NUMBER® bed adjusts independently, making it the perfect bed for couples.

TRY IT FOR 30 NIGHTS, RISK FREE!†

30 NIGHT TRIAL

We're so sure you'll sleep better, you can take up to one month to decide, or your money back!† You've got to sleep on it to believe it.

Receive a Special Thank You Gift!

For a limited time, inquire about our revolutionary bed and we'll send you a special **$50 Savings Card** to use toward the purchase of any *Sleep Number* bed or accessory items of $100 or more.‡

Get Relief from Back Pain

93%	Experienced back-pain relief
89%	Reported improved sleep quality
77%	Discovered increased energy

It's the bed clinically proven to relieve back pain and improve sleep quality. Clinical studies show an amazing 93% of participants reported back-pain relief while 90% said other aches and pains were reduced.*

*Descriptions of clinical studies conducted on the *Sleep Number* bed are available at 1-800-831-1211.
†If not satisfied after 30 nights, call within 45 days of delivery to arrange return. We'll reimburse the purchase price less your initial shipping or Home Delivery and Setup fees. You pay return shipping. No returns or exchanges on Precision Comfort® Adjustable Foundation, closeout or demo bed models.
‡Restrictions apply. See card for details and expiration date.
©2009 Select Comfort

Call Now! 1-800-831-1211 ext 38879
sleepnumber50.com

❑ **YES!** Please send me a FREE Brochure, DVD and Pricing.

❑ **Limited-Time Bonus!**
$50 Thank You Savings Card!‡

Name_____
(Please print)
Address_____
City_____ State_____ Zip_____
Daytime Phone_____ Ext. 38879
Email_____

Mail to: *Select Comfort, 9800 59th Avenue N., Minneapolis, MN 55442*

sleep number by SELECT COMFORT

‡Restrictions apply. See card for details and expiration date.

www.journal-plaza.net & www.freedowns.net

WOODWorkersCenter.com

FREE Product Information from Advertisers in This Issue

Looking for FREE product information? Fill out the coupon in this section to receive FREE product info and catalogs.
Or, for quicker service and instant access to information, visit us online at www.woodworkerscenter.com

Adhesives & Finishes

TITEBOND® III ULTIMATE WOOD GLUE Superior bond strength, waterproof, longer open-assembly time. The Best Wood Glue Ever! **Circle No. 24.**

GORILLA WOOD GLUE High strength, shorter clamp time, and no dyes for a natural finish. Try it today on your next building project. **Circle No. 50.**

Bits, Blades, Cutting Tools

CMT ORANGE TOOLS Top quality industrial saw blades and router bits at affordable pricing. **Circle No. 180.**

FINAL CUT SAW BLADE Only blade that cuts and sands at the same time. **Circle No. 194.**

FORREST MFG. CO., INC. Top quality blades and dados for an ultra smooth finish. **Circle No. 206.**

SAWSTOP SawStop table saws stop the blade upon contact with skin. **Circle No. 280.**

WOODLINE USA Router tables, routers, router bits,clamps, saw blades and more. **Circle No. 310.**

Books, Plans and Videos

AMERICAN FURNITURE DESIGN CO. 150 of America's best furniture plans, comprehensive instruction guide. Catalog. **Circle No. 336.**

U-BILD WOODWORKING PLANS Since 1948! Hundreds of full-size plans, downloadable plans, low prices. **Circle No. 435.**

General Woodworking Catalogs

GRIZZLY INDUSTRIAL, INC. 12,000 woodworking and metalworking machines, tools and accessories — unbeatable prices! **Circle No. 583.**

HARTVILLE TOOL CATALOG Quality woodworking tools and supplies at the best prices around. **Circle No. 596.**

WOODCRAFT SUPPLY CORP. Over 15,000 top quality woodworking tools, supplies, and accessories. **Circle No. 700.**

Hand Tools, Jigs & Clamps

AFFINITY TOOL WORKS Manufacturer of quality hand tools and products for cabinetmaking, carpentry, woodworking. **Circle No. 734.**

KREG TOOL CO. Your one stop shop for everything Pocket-Screw related. **Circle No. 802.**

STANLEY SWEETHEART HAND PLANES New Sweetheart premium hand planes by Stanley. **Circle No. 829.**

Hardwood & Lumber

M.L. CONDON COMPANY Single, convenient source for lumber, plywood, mouldings, custom millwork, more. **Circle No. 844.**

LOGOSOL, INC. Portable sawmills, precision woodworking machinery. **Circle No. 845.**

STEVE H. WALL LUMBER CO. Quality hardwoods, plywood, exotic lumber. Ship UPS/motor freight, wholesale prices. **Circle No. 856.**

WOODWORKERS SOURCE Hardwoods from around the world. **Circle No. 869.**

Income Opportunities & Education

FURNITURE MEDIC Offering franchise licenses to qualified individuals to perform mobile, on-site furniture repair & restoration services. **Circle No. 895.**

PROFURNITUREBUILDER.COM ProFurnitureBuilder.com from Meadowbrook Creations. Start your own made-to-order furniture business. **Circle No. 919.**

WOODCRAFT RETAIL FRANCHISE Own a Woodcraft Store — franchises offered for stores across the country. **Circle No. 924.**

Kits

DETAILED PLAY SYSTEMS Wooden swingsets and playground equipment for the backyard. Free catalog. **Circle No. 958.**

KLOCKIT The leading supplier of clock-making supplies for over 35 years! **Circle No. 973.**

STEEBAR For over 20 years supplying clock kits, pen making kits, and woodworking plans. **Circle No. 1002.**

WOODEN-GEAR-CLOCKS.COM Create a wooden gear clock—kits and plans available. **Circle No. 1008.**

Lawn & Garden

ZOYSIA FARMS NURSERIES Amazoy Zoysia grass saves you time, work and money. **Circle No. 1017.**

Miscellaneous

APOLLO SPRAYERS TURBINE SYSTEMS Quality control, engineering and durability. **Circle No. 1061.**

AZTEC STEEL CORP. Quality pre-engineered arch-style steel buildings at the lowest cost anywhere. **Circle No. 1064.**

CENTRAL BOILER Classic Wood Furnaces – clean, safe, efficient heat for your home. **Circle No. 1105.**

RADIANT FLOOR COMPANY Radiant Heating Systems—design, manufacture and sale for the DIY. **Circle No. 1301.**

ROCKAUTO.COM Check out www.RockAuto.com for all the parts your car or truck will ever need. **Circle No. 1310.**

Power Tools

COOK'S SAW MFG., L.L.C. Portable sawmills, Edgers, Sharpeners, Band Blades… Free catalog. Video available. **Circle No. 1480.**

PLASMA CAM, INC. Put metal into your wood projects! Free Demo Video! **Circle No. 1641.**

RADARCARVE Manufacturer of specialized wood carving duplicators. **Circle No. 1673.**

TOOLS MADE BY WOODWORKERS New England-based RIKON Power Tools is committed to making the best products for its knowledgeable customers. **Circle No. 1679.**

SHOPBOT TOOLS INC. Complete CNC systems for applications in wood, plastic and metal. **Circle No. 1714.**

STANLEY-BOSTITCH FINISH NAILERS & STAPLERS The preferred brand among professionals when it comes to finish nailers and staplers. **Circle No. 1768.**

Request FREE product information today. Log on to www.WOODWorkersCenter.com
www.journal-plaza.net & www.freedowns.net

STEEL CITY TOOL WORKS We bring you tools with meaningful features, a fair price, and the longest warranty in the business. **Circle No. 1769.**

TOOLMART INC. Woodworking tools and accessories by top brands: Delta, DeWalt, Porter Cable, Jet, Powermatic. **Circle No. 1770.**

WOOD-MIZER PRODUCTS Eight Portable Sawmills Available starting with the LT10 at $3995. **Circle No. 1805.**

WOODMASTER TOOLS Multi-duty planers that mold, sand & saw. **Circle No. 1820.**

Project Parts & Materials

OSBORNE WOOD PRODUCTS, INC. A free catalog of table legs, corbels, and island legs. **Circle No. 1849.**

OSBORNE WOOD PRODUCTS, INC. WOOD CORBELS offer classic corbels in a broad range of styles. **Circle No. 1851.**

Shop Accessories

CARTER PRODUCTS COMPANY, INC. Bandsaw Guide kits, tires, stabilizer guides, and many other products. **Circle No. 1883.**

THE JDS COMPANY Specializing in the finest air filtration and dust collection equipment. **Circle No. 1974.**

LIGNOMAT USA, LTD. Affordable, reliable, pin and pinless moisture meters for wood. Free catalog. **Circle No. 2013.**

ONEIDA AIR SYSTEMS, INC. Free informative catalog contains dust collection systems and complete ductwork. **Circle No. 2039.**

PENN STATE INDUSTRIES Award-winning dust collection. Collectors, Cyclones, Ductwork and more. **Circle No. 2045.**

Shop Supplies

CLEANSTREAM PRO FILTERS With CleanStream's HEPA filtration fine dust doesn't stand a chance. **Circle No. 2124.**

Woodturning Supplies

BEREA HARDWOODS Quality pen kits and other turning kits. **Circle No. 2127.**

HUT PRODUCTS Woods, acrylics and supplies for pen and game call turning. **Circle No. 2133.**

PACKARD WOODWORKS Free Catalog for WOODTURNERS! — Quality Lathes, Tools and Supplies. **Circle No. 2143.**

PENN STATE INDUSTRIES Leading supplier of Turning Products. Pen kits, project, finishes and more. **Circle No. 2151.**

Log on to www.WOODWorkersCenter.com

Get the Garage You Want

Turn your space into a "Garage Mahal." This completely new publication shows you how.

On Newsstands NOW

$6.99 U.S.
$8.99 Canada

Order online at **woodmagazine.com/publications**
or call toll free **888-636-4478**

WD0510

WOODWorkersCenter.com

FREE Product Information

DEPT. WOAM10

CIRCLE THE NUMBERS BELOW CORRESPONDING TO ITEMS IN THIS ISSUE.

24	435	845	1002	1480	1805	2045
50	583	856	1008	1641	1820	2124
180	596	869	1017	1673	1849	2127
194	700	895	1061	1679	1851	2133
206	734	919	1064	1714	1883	2143
280	802	924	1105	1768	1974	2151
310	829	958	1301	1769	2013	4000
336	844	973	1310	1770	2039	

Discover how rewarding woodworking can be! Get one full year of WOOD® for just $28.00 (7 issues).
Simply circle No. 4000. You will be billed later.

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

E-MAIL ADDRESS _____

PHONE (OPTIONAL) _____

TO ENSURE PROMPT HANDLING OF YOUR ORDER, PLEASE:
- Circle Your Choice(s) in the box above
- Send card to WOOD® Magazine, Dept. WOAM10, P.O. Box 5135, Buffalo, NY 14205-5135
- Allow 4-6 weeks for delivery
- This card expires September 23, 2010

www.journal-plaza.net & www.freedowns.net

The Right CNC for Any Shop

PRSalpha 120-60

PRSalpha BT32 Buddy

Whether you're a weekend woodworker with a garage workshop or a serious craftsman with room to spare, ShopBot has an affordable, American-made CNC system for your needs, space and budget.

Our PRSstandard CNC gives you the performance necessary to take your designs to the next level, while our PRSalpha offers professional-grade speed, power and accuracy at a fraction of the cost of the big iron machines, and both are available in a variety of sizes to fit your shop.

To get you up and running as quickly as possible, we offer training at our headquarters or in your shop. And, with some of the best customer service in the industry and a worldwide peer support network, help is never more than a phone call or a mouse click away.

Call or visit us online today, and let ShopBot build you a CNC system ready to meet your needs at a cost that won't break your budget.

ShopBot®

What will you make today?

www.shopbottools.com
twitter.com/shopbot
888-680-4466

Hartville Tool

SINCE 1972

OHIO'S LARGEST TOOL STORE!

T-Track 6 Piece Super Savings Bundle

For A Limited Time Only! $29.98

save 40%

Reg $49.99

Offer Valid for 90 days

Item # K10596

Includes
2 ea. 12" Utili-Track
2 ea. 24" Utili-Track
1 ea. 36" Utili-Track
1 ea. 48" Utili-Track

FREE! SHIPPING
On Orders Over $99
(Lower 48 States)

FREE Catalog!

hartvilletool.com
800-345-2396

Woodworker's Marketplace

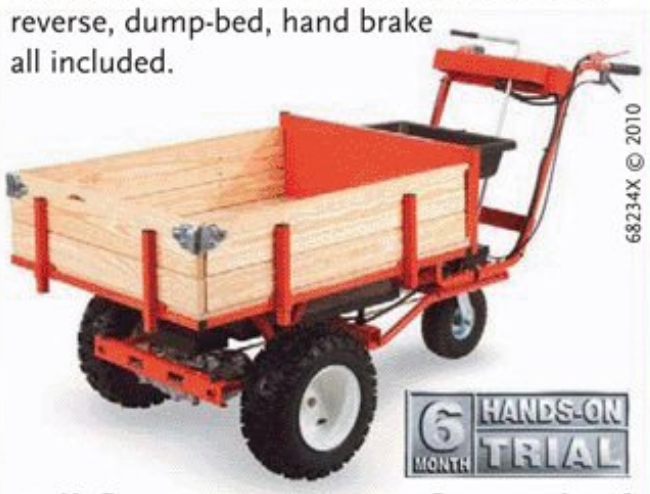
The DR® POWERWAGON is a Self-Propelled EASY HAULER

Sized and Priced for Home Owners!

HAULS UP TO 800 LBS. – firewood...mulch...gravel...stone. Powers up hills and down...even through soft, wet soil!

ELECTRIC-START and powered dump options available.

EASY TO USE! Rear caster and differential drive for easy turning...4 speeds, reverse, dump-bed, hand brake all included.



68234X © 2010

Call for a FREE DVD & Catalog!

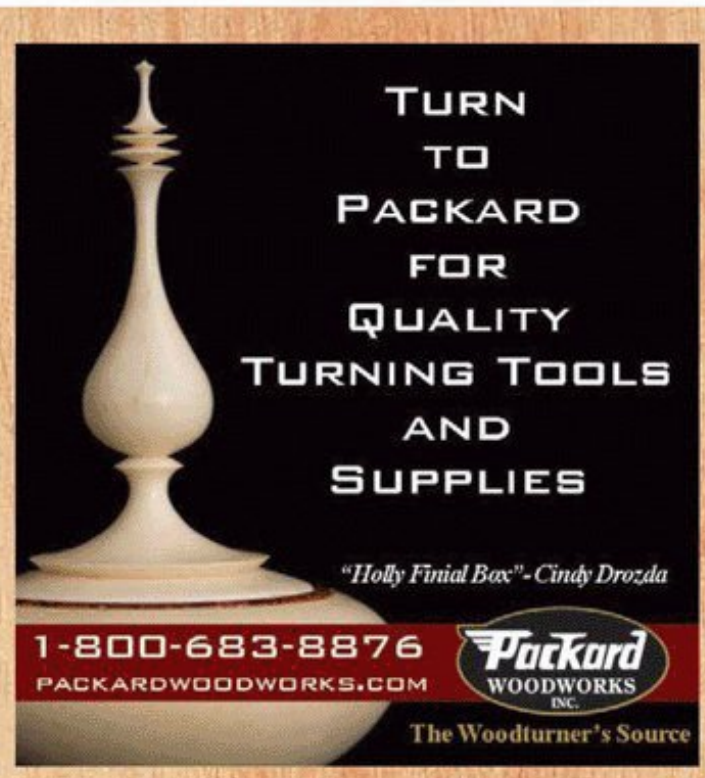
TOLL-FREE
888-213-2037
DRpowerwagon.com

One Man Sawmill TURNS TIMBER INTO CASH

TIMBERKING
Dept. ZB08, 1431 N. Topping Ave., Kansas City, MO 64120

FREE Fact Kit

CALL TOLL FREE TODAY!
1-800-942-4406
www.timberking.com



STEVE WALL LUMBER CO.

Quality Hardwoods and Woodworking machinery For The Craftsman and Educational Institutions

Ash	4/4	Select	$ 2.60
Basswood	4/4	Select	$ 1.95
Birch	4/4	Select	$ 3.55
Butternut	4/4	1C	$ 2.95
Cherry	4/4	Select	$ 4.90
Hickory - Pecan	4/4	Select	$ 3.00
Mahogany (Genuine)	4/4	Select	$ 4.70
Maple (Hard)	4/4	Select	$ 3.45
Maple (Soft)	4/4	Select	$ 2.50
Poplar	4/4	Select	$ 1.80
Red Oak	4/4	Select	$ 2.70
Walnut	4/4	Select	$ 4.90
White Oak	4/4	Select	$ 2.70
Cedar (Aromatic Red)	4/4	1C+Btr.	$ 1.80
Cypress	4/4	Select	$ 2.60
White Pine	4/4	F.G.	$ 1.25
Yellow Pine	4/4	Clear	$ 2.30

Above prices are for 100' quantities of kilndried rough lumber sold by the Bd. Ft. FOB Mayodan, NC. Call for quantity discounts. Other sizes and grades available.

UPS Specials

	$ 94.00
	$ 80.00
	$ 108.00
	$ 88.00
	$ 117.00
	$ 100.00
	$ 112.00
	$ 108.00
	$ 88.00
	$ 78.00
	$ 96.00
	$ 115.00
	$ 96.00
	$ 78.00
	$ 90.00
	$ 70.00
	$ 82.00

SEE OUR CATALOG ON THE WEB!

Above prices are 20 bd. ft. bundles of clear kilndried lumber 3"-10" wide • 3'-5' long (Random widths & lengths) Surfaced 2 sides or rough. Delivered UPS prepaid in the Continental U.S.

OLIVER MACHINERY DEALER
HARDWOOD PLYWOOD
CUSTOM RAISED PANEL DOORS
CUSTOM PLANK HARDWOOD FLOORING
THIN CRAFTWOOD
EXOTIC LUMBER

STEVE H. WALL LUMBER CO.
BOX 287
MAYODAN, N.C. 27027
336-427-0637
1-800-633-4062
FAX 336-427-7588
Email: wood@walllumber.com
Website: www.walllumber.com

Send $1.00 For Lumber Catalog
Prices Subject to Change Without Notice

www.journal-plaza.net & www.freedowns.net

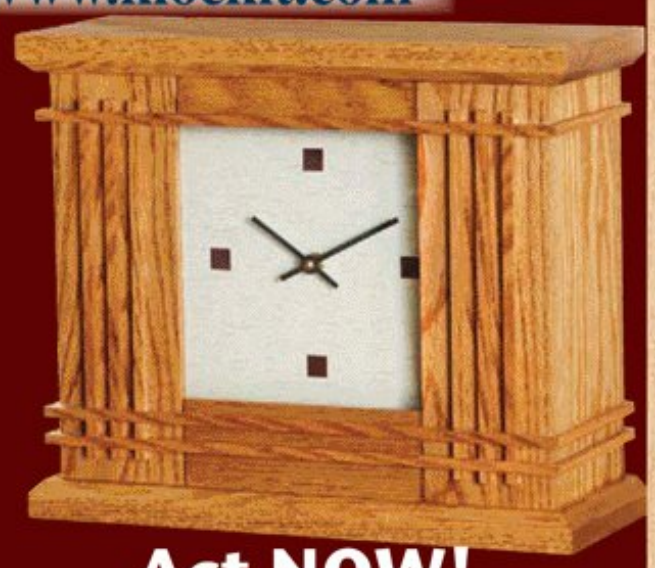
KLOCKIT®

Leading Supplier To WoodWorkers For 38 Years!

Call Today For Your FREE Catalog!

Klockit Offers The Largest Selection Of Clock: Movements · Dials · Hands · Kits · Plans · Hardware & Much More!

www.klockit.com



Act NOW!
Receive **10% OFF** your order!
Source Code: 5A448
Expires: May 30, 2010

1-800-556-2548
Follow Klockit on
Dept: WD410

THE SMART MOWER.

Powered by: DURACELL Rechargeable

68236X © 2010

The NEUTON® Battery-Powered Mower is the easy, reliable, quiet lawn mower – and the only mower powered by DURACELL® – the batteries trusted everywhere.

neuton®

So why struggle with a gas mower?
Get a FREE DVD & Catalog!

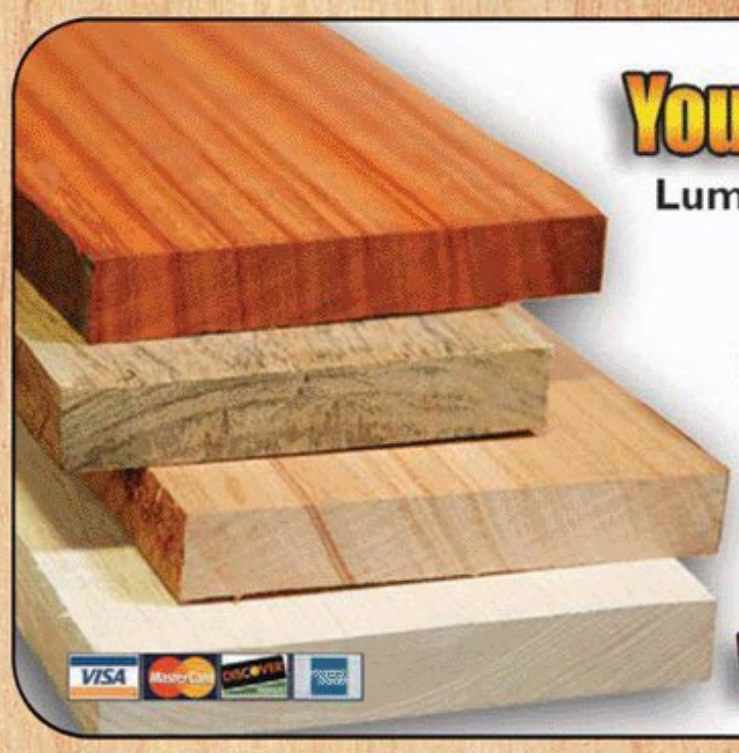
TOLL FREE **1-877-201-6820**
www.neutonmowers.com

Great Investment

High Quality American Steel Span buildings make a great investment, perfect for a workshop, ideal for a garage.

Maintenance-Free • Savings Up to 60%

www.steelspan.com
800-891-6733 ext 018
©2009 King Solomon Creative Enterprises Corp.



Your Source for Wood

Lumber • Veneer • Turning Stock
Domestic & Exotic

800.423.2450

WOODWORKERS Source

Over 100 beautiful woods.
Secure online ordering.

www.101woods.com

VISA MasterCard DISCOVER AMERICAN EXPRESS

---

www.logosol.com
1-877-564-6765

M7 Chainsaw Mill. The easiest, most versatile, and economic way to cut quality boards.

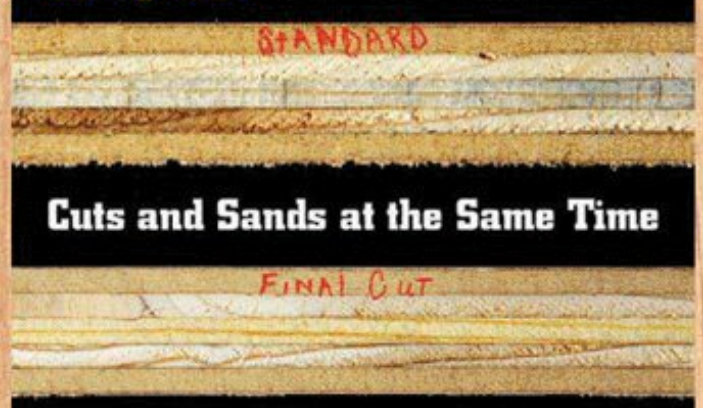
2-Year Warranty.
60-Day Money-back Guarantee.

State-of-the-Art Website,
Success Stories, Forum, Technical Specs, How-to Info, Pricing and More.

PH260. The original, superior quality 4-sided planer/moulder.

LOGOSOL
SOLUTION DRIVEN WOOD PROCESSING

Compare: See how Final Cut



Cuts and Sands at the Same Time

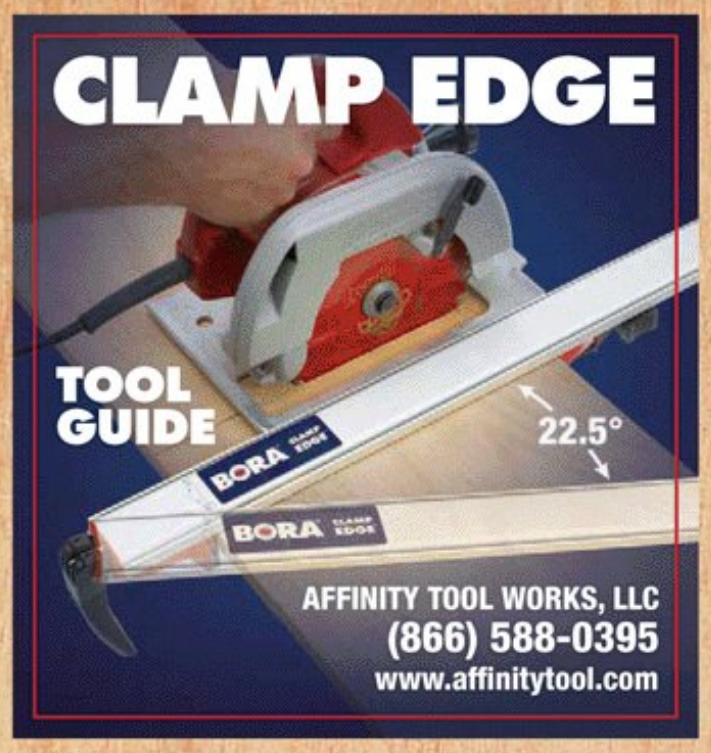
FINAL CUT
All in one step...Just cut, the sanding is a bonus
www.finalcutblade.com

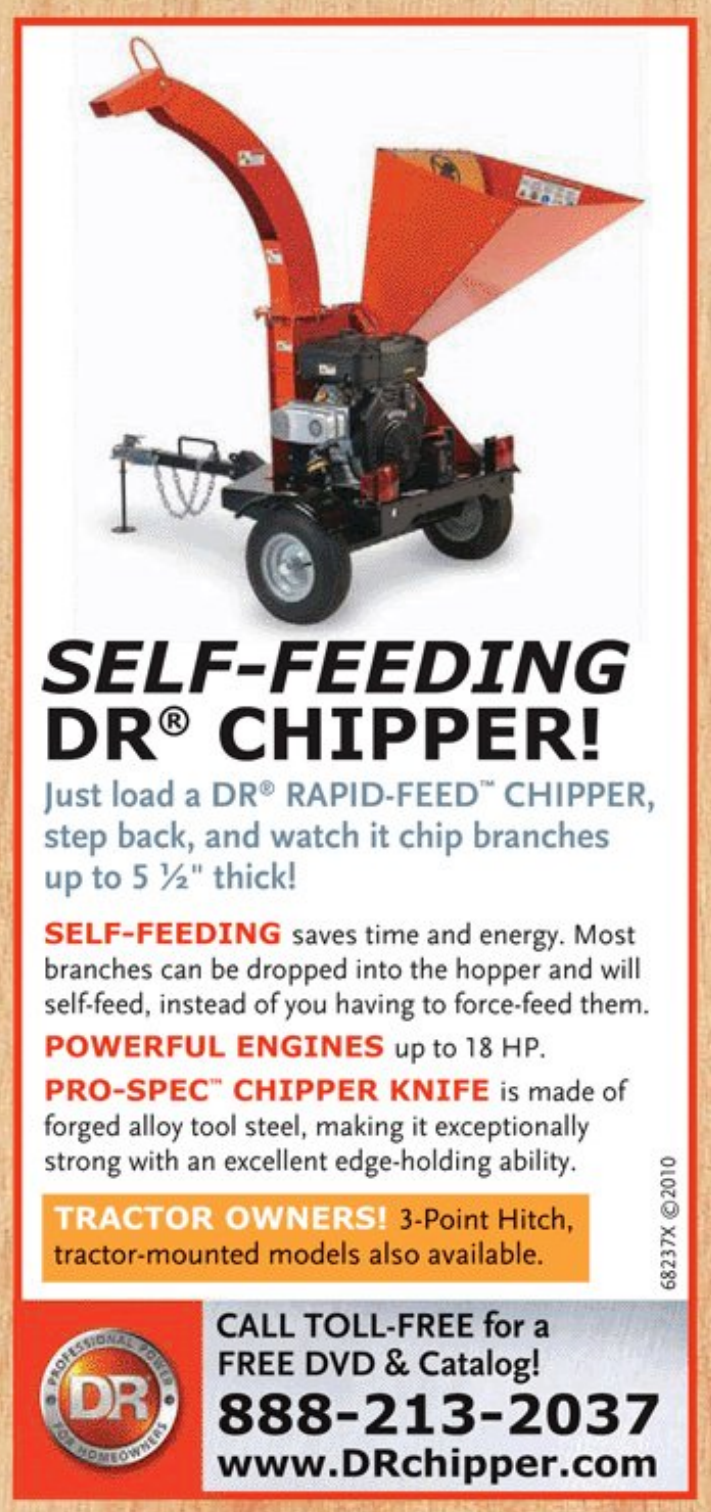
WWW.PENMAKINGSUPPLIES.COM

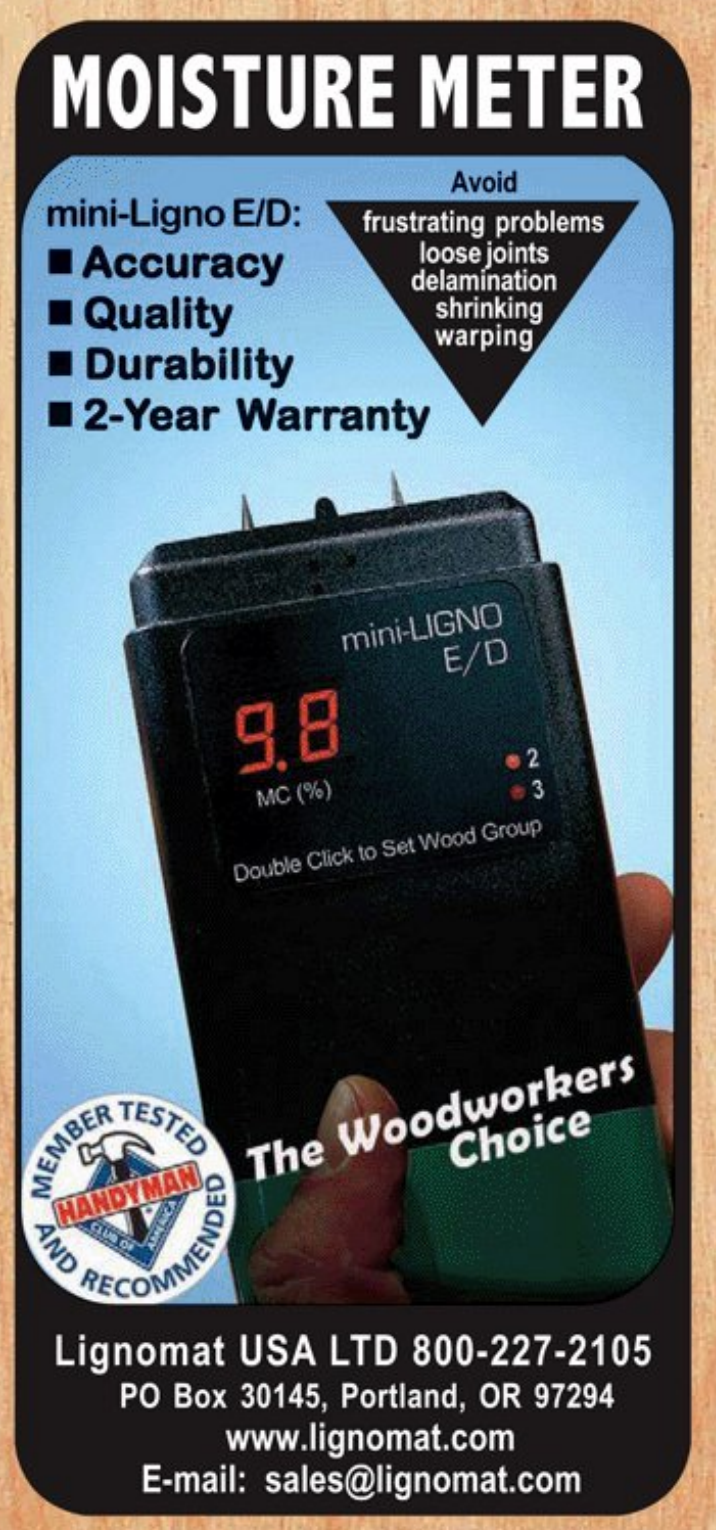
Pen Kits, Pen Blanks, Finishing Products, Lathes, & More!

ORDER TOLL FREE
1-800-653-1930

www.journal-plaza.net & www.freedowns.net



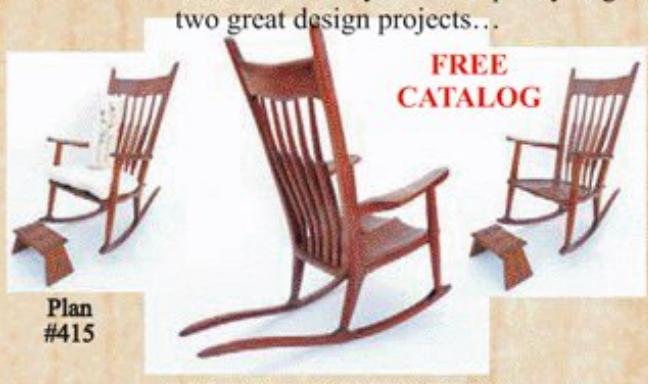

SELF-FEEDING
DR® CHIPPER!
Just load a DR® RAPID-FEED™ CHIPPER, step back, and watch it chip branches up to 5 ½" thick!
SELF-FEEDING saves time and energy. Most branches can be dropped into the hopper and will self-feed, instead of you having to force-feed them.
POWERFUL ENGINES up to 18 HP.
PRO-SPEC™ CHIPPER KNIFE is made of forged alloy tool steel, making it exceptionally strong with an excellent edge-holding ability.
TRACTOR OWNERS! 3-Point Hitch, tractor-mounted models also available.
68237X ©2010
CALL TOLL-FREE for a FREE DVD & Catalog!
888-213-2037
www.DRchipper.com



www.journal-plaza.net & www.freedowns.net

Nancy's Rocker & Footstool

Most woodworkers' "want'a do list" of projects includes building a **"Maloof Inspired"** rocking chair. Our 34 page instruction booklet with color photos, and two 36" x 48" full-size patterns provide you with all the knowledge and confidence you will need to build **Nancy's Rocker** and the matching footstool, also shown full size…..! Actually with our plan you get two great design projects…



FREE CATALOG

Plan #415

AMERICAN FURNITURE DESIGN
P.O. BOX 300100 ESCONDIDO, CA 92030
Nancy's Rocker & Footstool $45.98 + $7.00 S/H
www.americanfurnituredsgn.com

Knifemaking Made Easy!

Cutlery Blades

Traditional style blades assist the woodworker in creating a set of knives to be appreciated for a generations to come!

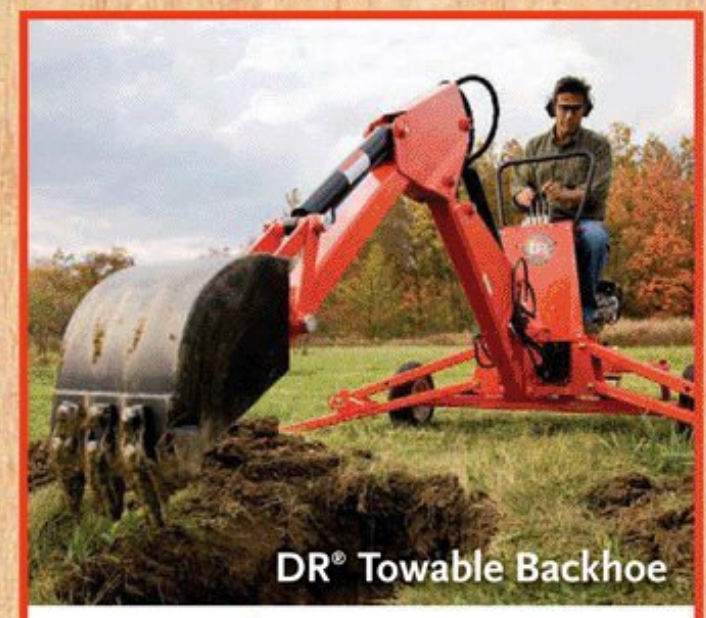
Complete set includes 11 blades shown, rivets, Dymondwood and instructions:

SS801.....$74.95

Over 300 blades and kits available

Knife making kits, Exotic Woods, Horn, Pearl, Ivory, Abrasives, Finishing Supplies, Schrimshaw kits Leathercraft Supplies, Books, Videos, And More!

JANTZ SUPPLY
309 WEST MAIN - DAVIS OK 73030
Full Color Catalog ($5.00)
1-800-351-8900
www.knifemaking.com



BIG DIGGING POWER FOR HOMEOWNERS.

ALL THE POWER of a Tractor-Mounted Backhoe at a FRACTION OF THE COST!

The DR Backhoe has its own engine and powerful hydraulic system, so there are no connections to hassle with — just hitch and go! Tow it around your property with your ATV or Lawn Tractor. Hook it to your pickup for easy **highway transport** (no trailer required). It's a truly different kind of digger!

6 MONTH HANDS-ON TRIAL

68235X © 2010

Call for a FREE DVD & Catalog!

TOLL FREE
888-213-2037
DRbackhoe.com

WOOD HEAT CLASSIC

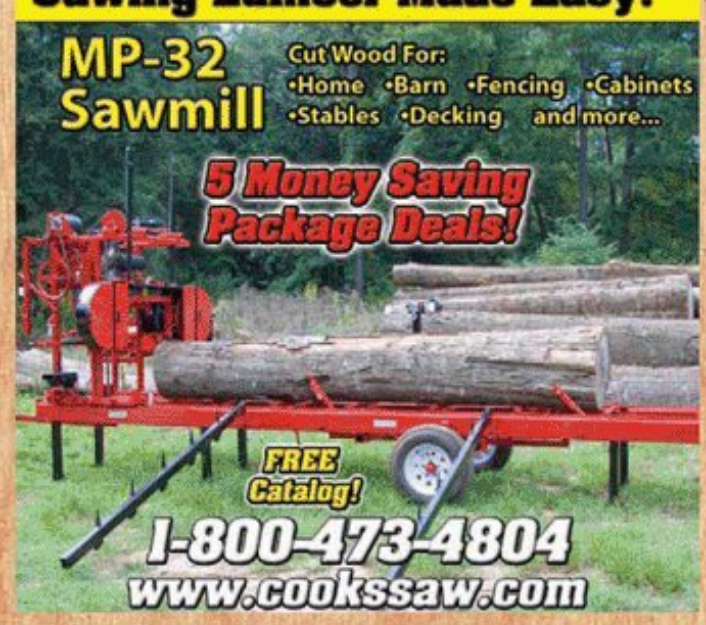
Outdoor Wood Furnace

- Heat your entire home, multiple buildings along with water, and more.
- Adapts easily to new or existing heating systems.
- There is no safer, more convenient way to heat with wood.

Central Boiler
Find your nearest dealer at:
CentralBoiler.com
800-248-4681
©2010 Central Boiler ad5561

Get Into Wood

Sawing Lumber Made Easy!



Projects and Plans

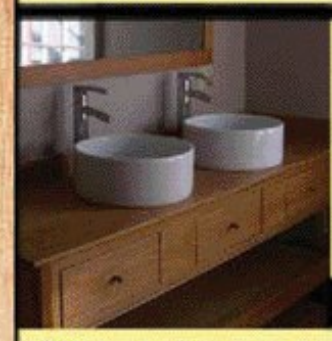
Wheelbarrow

Kit to build includes 15" **iron wheel** *that really works,* **axle** and step-by-step **plans**. Finished project measures 66"L x 24"W x 26"H. $39.95 plus S/H

ByeGone Workshop
888-279-3941 8-5 M-F EST
www.byegone.com

Your 4-Season Business

Build 30+ Products Proven to Sell
Get all you need to be successful



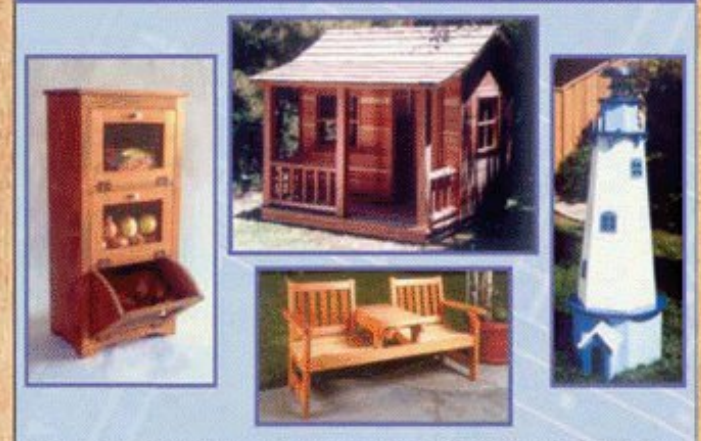
Marketing Know-how
40 Page Web Site
Catalogs
Brochures

0% Financing

Protected Territory

ProFurnitureBuilder.com

U-BILD.COM



On-line catalog pictures hundreds of full-size woodworking plans at low prices, plus more than 30 downloadable plans. Indoor, outdoor, kids and holiday projects for all skill levels.

(800) 82-U-BILD

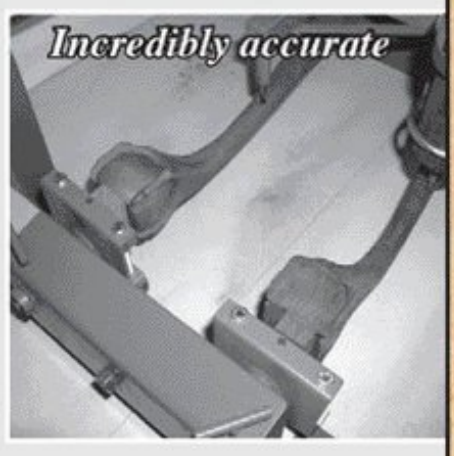
Better Homes and Gardens®
WOOD® MAGAZINE

For advertising in the Woodworkers' Marketplace, please call **Lisa Greenwood** at **1-800-950-3829** or
lisa.greenwood@meredith.com

WWW.RADARCARVE.NET

Wood Carving Duplicators

- Furniture
- Gunstocks
- Millwork
- Decoys
- Musical Instruments



Thousands of Uses 505-948-0571

www.journal-plaza.net & www.freedowns.net

What's Ahead

Coming up in the July 2010 issue (on sale May 18)

FEATURED PROJECT

Gorgeous Garden Pergola

With just basic tools (and a buddy to help with the assembly), you can create this outdoor room for relaxing and entertaining. You'll find every detail from setting the posts to raising the beams to making the lattice screens.

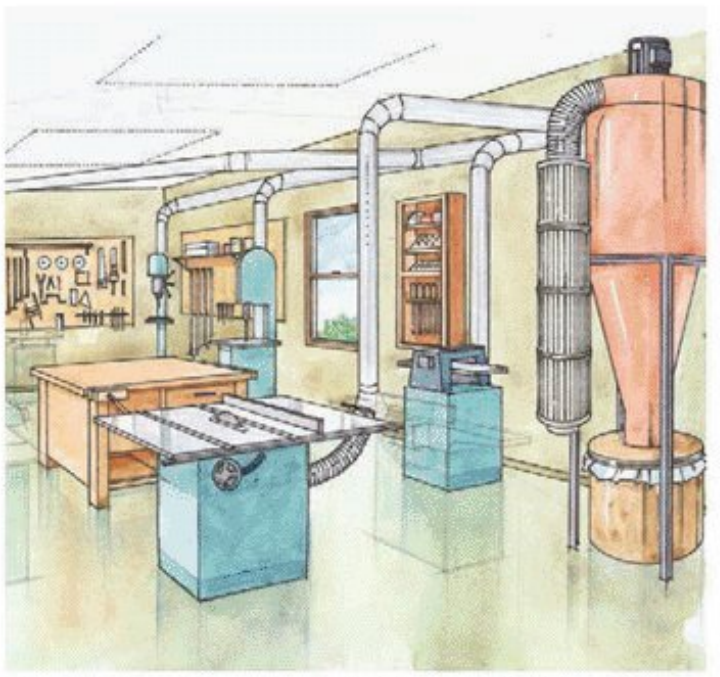
TOOL TEST

Pint-size Powerhouses

We put 10 cordless micro-drivers through rigorous testing and find they deserve a spot in any shop.

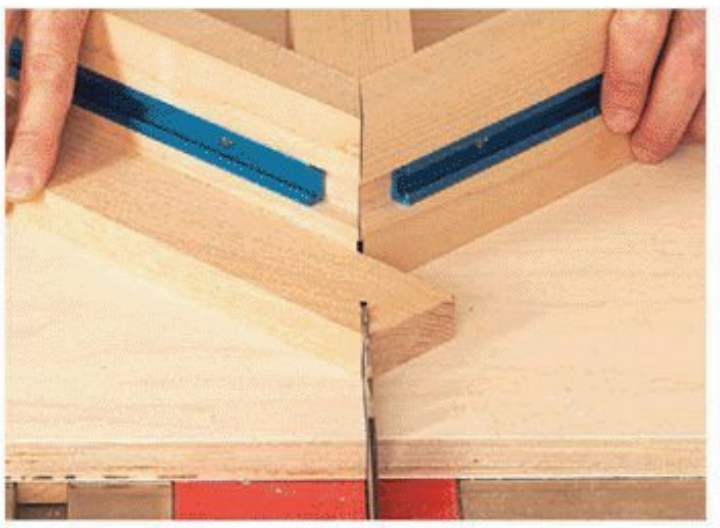
Tap-dancing Timekeeper

Sashay into the shop for a few hours and craft this kid-approved clock.



Dust Collection that Evolves with Your Shop

Design a system that keeps up as your skills and tools expand. Your lungs (and family) will thank you.



Cut Dead-On Miters Every Time

This all-new, easy-to-make miter sled takes the work out of accurately mitering corners.

Friendly Greeting Entry Hall Bench

Station this combination coat rack and bench at your front door and capture clutter before it spreads.

Better Homes and Gardens® WOOD® magazine (ISSN-0743-894X) is published seven times a year in March, May, July, September, October, November, and December/January by Meredith Corporation, 1716 Locust St., Des Moines, IA 50309-3023. Periodicals postage paid at Des Moines, Iowa, and additional mailing offices. Better Homes and Gardens trademark registered in Canada and Australia. Marca Registrada en México. One-year subscription prices: U.S. and its possessions, $28; Canada, $41; other countries, $49. Canada Post Publications Mail Sales Product Agreement No. 40069223. Canadian BN 12348 2887 RT. Return undeliverable Canadian addresses to: Better Homes and Gardens WOOD magazine, PO Box 882 STN Main, Markham, ON L3P 929. POSTMASTER: Send address changes to Better Homes and Gardens WOOD magazine, P.O. Box 37439, Boone, IA 50037-0439.

www.journal-plaza.net & www.freedowns.net

BROUGHT TO YOU BY

Sears BLUE TOOL CREW

HEY WOODWORKERS:

BRACE YOURSELF

NEW! Craftsman 10-in. Portable Table Saw

Offers you big saw power and work area without the commitment of big saw space.

In just seconds:
- *sets up easily*
- *handles most jobs*
- *stores in small garage or shop spaces*

24-in. rip capacity *cuts the center of a sheet of plywood*

Includes *a powerful 15 amp motor, side mounted storage for accessories and 36-tooth carbide blade*

Table top bevel scale *for a quick angle read between 0–45˚*

Spring loaded stand *sets up hassle free*

CRAFTSMAN®
TRUST. IN YOUR HANDS.

AVAILABLE AT SEARS.COM STARTING APRIL 1, 2010 (IN STORES MID-MAY)

PRE-ORDER
yours today at sears.com/newsaw
$289.99
Item #28463

PLUS GET 25% OFF your choice of two carbide blade packs.

Save time, money and complete more projects with the purchase of either of these blade packs.
Offer valid 4/1/2010 thru 5/22/2010. Must purchase table saw to receive blade discount.

Craftsman 10-in. Saw Blade 2-pack. 28T and 40T. Reg. $19.99, #29283

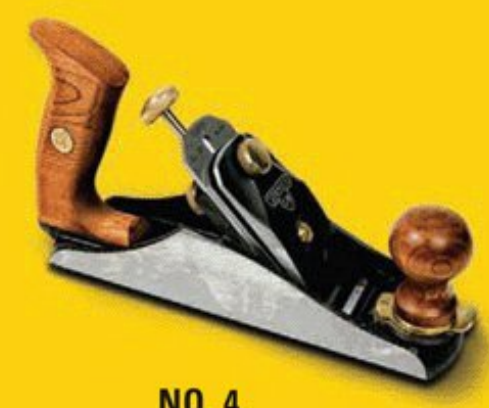
Craftsman 10-in. Saw Blade 3-pack. 28T, 40T and 64T. Reg. $36.99. #29285

See a video of this new portable table saw at sears.com/newsaw

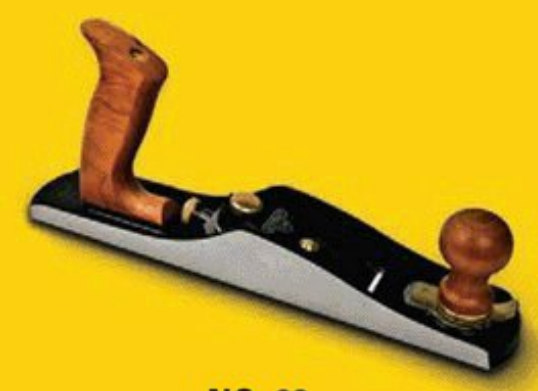
Sears
Life. Well spent.

www.journal-plaza.net & www.freedowns.net

THEY'RE BACK



NO. 4
SMOOTHING PLANE



NO. 62
LOW ANGLE JACK PLANE

NO. 60 -1/2
LOW ANGLE BLOCK PLANE

NO. 9 -1/2
BLOCK PLANE

NO. 92
SHOULDER / CHISEL PLANE

STANLEY S.W.®

© The Stanley Works 2009

Stanley® Revisits A Cherished Era of Quality and Craftsmanship.

Introducing the new line of Stanley® premium hand planes. Their mechanical precision, simple adjustment features, and top-quality materials are once again worthy of the famous Sweetheart™ logo ... a distinction that professionals and serious woodworkers recognize as a coveted symbol of quality. Not only do these hand planes maintain a tradition of quality and craftsmanship, they also offer a Sweetheart™ price as well.

Visit a participating Stanley® dealer near you to own yours today.

STANLEY®

stanleytools.com

www.journal-plaza.net & www.freedowns.net